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" 102, Chas. La Bounty, Box 563, So. Haven, Mich.
" 103, C. H. Hall, Box 512, New Berne, N. C.
" 104, J. H. Blumer, Moss Point, Miss.

TRADE PUBLICATIONS.

The gas engines of the Mianus Motor Works. Mianus, Conn., are described and illustrated in a six-page folder which is being distributed. The various features which are most important in an engine are referred to, such as ignition, lubrication, accessibility of parts, etc.

The last public address of President McKinley, delivered at the Pan-American Exposition, Buffalo, on September 5th, and an address entitled "Our Place Among Nations," delivered by President Roosevelt in Boston on April 30th, have been republished in pamphlet form. Copies can be had from M. H. Tarbox, treasurer of the Boston and Lockport Block Co., Boston, Mass.

The punching and shearing machinery manufactured by the Long and Allstatter Company, Hamilton, Ohio, is fully described in a large and fine catalogue just issued, known as No. 20. This catalogue is 6 by 9 inches in size and contains 160 pages, showing in great variety the punching and shearing machinery which this company manufactures, including also bending and forming machines, bending rolls, drop hammers, etc.

The White marine gasoline engine manufactured by the Globe Iron Works Company, 2425 University avenue, S. E., Minneapolis, Minn., is described in a thirty-page catalogue now being distributed. The catalogue is well printed on heavy coated paper and contains quite a number of illustrations of the engine, and the various features of the engine are fully described. The pictures show engines from about one horse-power to the two-cylinder engines of thirty or more horse-power. There are also a number of pictures of hulls of different types manufactured by this company, from small launches up to boats 50 feet or more in length.

Oil as Fuel, Its Advantages for Shops and Manufacturing Plants, is the title of a paper-bound book issued by the Railway Materials Company, Old Colony Building, Chicago, Ill. The subject of oil as fuel, not only in manufacturing plants, but on board vessels, is receiving a great deal of attention, and is one of much interest to those of our readers connected with both shipyards and the operation of vessels. In this booklet are pictures of furnaces of various sorts, such as for welding flues, heating rivets, forging furnaces, annealing furnaces for boiler shops and the like. This company also makes a device of great value in shipbuilding work in the form of a portable heater.

The De Laval steam turbine is described in a very handsome catalogue which has just been issued by the De Laval Steam Turbine Company, 74 Cortlandt street, New York City. This turbine is very fully illustrated and described, and its operation is shown by handsome engravings, which explain in much detail its operation. Several combinations of this turbine, in direct connected and belted work, are fully illustrated and described. These include electric plants, blower outfits, pumps in several forms, fire equipments, marine generating sets and launch turbines. Altogether the catalogue is one of exceptional interest because of the great attention which turbines are now attracting. Copies can be had upon application to the company.

Small electric storage batteries for use where a limited amount of power is wanted, such as operating miniature electric lamps, for sparking gas engines, for electric bells for launches and vessels, fan motors, small lighting plants, portable lighting outfits, etc., are fully described in the cataogue isued by the United States Battery Company, 552 State street, Brooklyn, N. Y. The catalogue is very neatly printed, and much information is given regarding the design and construction of these batteries, and a number of practical tests are described. Pictures are given of individual batteries, as well as several plants in which a large number of batteries are combined. Any one interested in the subject of small power and light devices will find the literature of this company very valuable.

The vertical double-acting air pump and jet condenser, manufactured by Dean Bros.' Steam Pump Works, Indianapolis, Ind., is described in a twelve-page booklet just issued, as are also several other pumps of this company's make. On each page is a large picture of some sort, and accompanying it is brief descriptive matter.

Users of boats for launches, ship's boats or other purposes will be interested in a folder issued by Fred Medart, St. Louis, Mo., describing knock-down boats and complete sets of boat hull frames, of which he makes a specialty. A number of illustrations show different types of boats sold in this manner, and there is considerable information regarding material.

Engineering Periodicals and the Card Index is the title to a pamphlet issued by H. W. Hibbard, Ithaca, N. Y. It is the reprint of an address delivered before the students at the Society of Mechanical Engineers at Cornell University. It explains the advantages of systematic reading of current literature, and argues for the use of the individual card index.

The American separators and exhaust heads have a neat catalogue, pocket size, devoted to them and now being sent out by the manufacturer, Whitlock Coil Pipe Company, Elmwood, Conn. This catalogue is printed in two colors, and contains illustrations of the specialties referred to. The text is made easy for reference because of side headings. Copies of this catalogue and of others relating to the many specialties of this company can be had upon application.

Applications of Lundell Motors and Direct-Current Generators of the Split-Pole Type are the titles to two new bulletins which have been issued by the Sprague Electric Company, 527 West Thirty-fourth street, New York City. All of the bulletins issued by this company are exceedingly valuable, as each one takes up a specific subject. Each bulletin is very thoroughly illustrated with the very best of engravings, and contains the necessary descriptive matter to fully cover the subject. Wherever they are useful there are tables of various sorts, together with many line drawings of sectional views, etc. The subject of direct connected motors for running machinery has become an important one, and all our readers will find both of these bulletins well worth careful study.

Refrigerating machines are very thoroughly described and well illustrated in a catalogue that is being distributed by the American-Linde Refrigeration Company, 45 Broadway, New York. The catalogue is well printed on heavy paper and comprises 78 pages, with cover. There are several pictures of the machines manufactured by this company, together with sectional views of parts, folded insets, to explain more fully the text, together with much other valuable information. There are also lists of concerns which use this company's machines, together with tables regarding chloride of calcium, tables of brine solution, comparison of thermometers, properties of ammonia gas, properties of steam, etc. We infer that copies of the catalogue can be had by referring to MARINE ENGINEERING.

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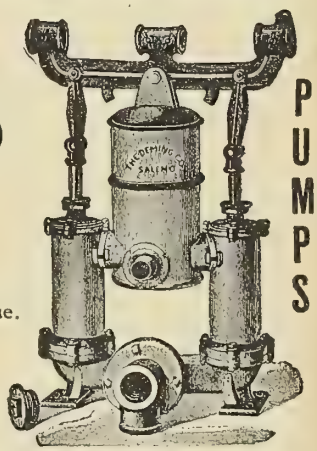

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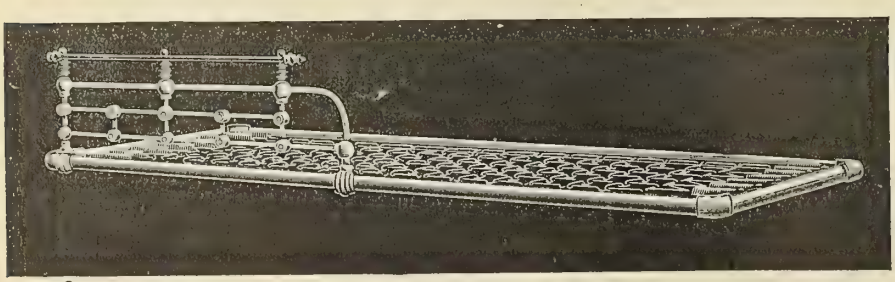

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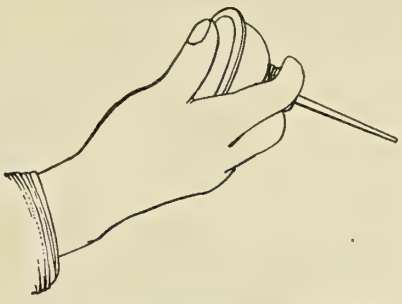

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FERGUSON PORTABLE HEATER.—The catalogue of the Railway Materials Company, Old Colony Building, Chicago, shows a cut of the Ferguson portable heater. The device consists of a tank, mounted on wheels, to hold twenty gallons of fuel or crude oil; the controlling valve for the atomizing device; the hose necessary to make air connection, and the burner. It is a portable and very compact apparatus. The hose is connected to the compressed air plant, and air is admitted to the tank. The vaporized oil and air pass out through a line of hose to the burner. This device is extensively used by railways for steel car repairs or heating heavy bent material. The vaporizing is believed to be as near perfect as possible, and the heater is capable of heating large material to a high heat. It is an excellent device for shipyards, being portable, and it is possible to run the tank to any part of the yard, the only necessity being sufficient air hose. No material is too heavy to be heated by this machine.

Pan-American Medal.—The Ross Valve Company, Troy, N. Y., announces on a neat card that it received a "Medal, and the Ross water engine is the only one receiving an award at the Pan-American Exposition."

The igniting dynamos manufactured by the Dayton Electrical Manufacturing Company, Dayton, Ohio, have a neat folder devoted to them. These dynamos and attachments are built especially for use in connection with gas engines for launches and other purposes, and their construction and manner of operation is fully described.

An electric hoisting plant for discharging vessels, recently erected by the C. W. Hunt Company, West New Brighton, Staten Island, is described in a pamphlet now issued by this company. The plant is illustrated and a few features and figures regarding the plant are given, showing comparative cost of operation, as well as manner of operation, etc.

Asbesto-Metallic Kearsarge and Wound Cloth Packing is the title to a booklet just published by the H. W. Johns Manufacturing Company, 100 William street, New York City. The number of illustrations shows the different manner in which this material is made up and the adaptability of it for enginering purposes is briefly stated. Any one who wishes packing in any form will want to send for a copy.

Higher Efficiency and Economy in Mechanical Advertising is the title to a booklet issued by Clarence P. Day, Postal Telegraph Building, New York City, who has just opened an office as advertising counsellor or specialist. Mr. Day has been connected with technical journalism for eighteen years, and, with his knowledge of mediums and methods, has published this booklet, which contains much valuable information for any one who is doing advertising or who contemplates undertaking it. The book is very neatly printed and is thoroughly divided for purposes of reference by means of side-headings. It contains much practical information regarding the subject of spending an appropriation account. We understand that copies of the booklet can be had by referring to MARINE ENGINEERING.

Water and Gas Work Appliances and Pumping Machinery is the title of a very handsomely printed and cloth-bound catalogue, 9 by 10 inches in size, which has just been issued by R. D. Wood and Company, 400 Chestnut street, Philadelphia, Pa. The catalogue is even more comprehensive than its title indicates, for not only are the several specialties referred to fully illustrated and described, but also large hydraulic riveters, together with many other tools and all sorts of auxiliaries for use in connection with hydraulic machinery, etc. The catalogue comprises 175 pages, and naturally there is a great deal of valuable information on subjects pertaining to the line of manufactures of this company. The completeness of the catalogue probably limits it to a very select circulation, as it is evidently a very expensive book to issue.

Walworth Mfg. Co., 130-136 Federal St. BOSTON

Specialty of BRASS VALVES and Fittings for Marine Construction

Extra Heavy Valves, Bent Pipe and Fittings for High Pressure Work

Sole Manufacturers of

Van Stone Pipe Joint

Which does not Weep under heavy pressure

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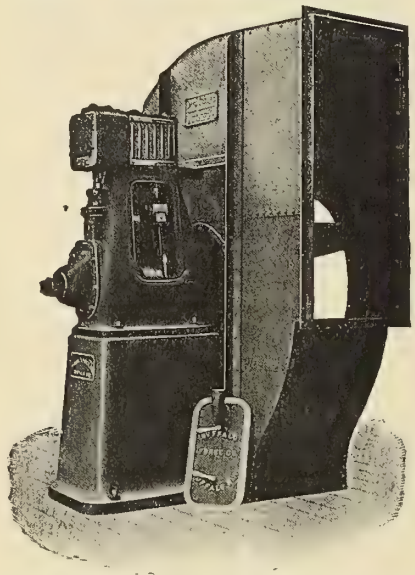

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Calendars for 1902.

The Ashton Valve Company, 271 Franklin street, Boston, Mass., issues a calendar lithographed in black, referring briefly to this company's pop safety valves and pressure and vacuum gauges. There is a sheet for each month, and the calendar is made effective by a lithograph of "La Mademoiselle." It is stated on the back that a copy of this calendar can be obtained by sending 10 cents to this company.

The Eagle Oil and Supply Company, 104 Broad street, Boston, Mass., now has a calendar for 1902 ready. The list of customers of this company is so large that the company is unable to meet the demands. The company's customers have already been provided for, and requests from other parties will be filled as promptly as possible. So many calls have been received that it is almost necessary for the company to ask that 10 cents be sent in stamps for postage. The calendar is a very handsome one, comprising twelve sheets, one for each month, and there is a different picture on each sheet. The sheets are printed in three colors.

BUSINESS NOTES.

BOYER WATER TUBE BOILERS.—The United States steamship *Georgetown*, that has recently been built for the United States Government, is fitted with Boyer patented sectional water tube boilers which were manufactured by John E. Thropp and Sons Company, Trenton, N. J., for L. Boyer's Sons, 90 Water street, New York. The boiler occupies a space 66 by 96 inches, has a heating surface of 1,400 square feet and a grate surface of 30 square feet. The boilers weigh 12,500 pounds, and the water weight is 1,950 pounds. The boilers furnish steam for two triple expansion engines 7 x 10 x 15 inches by 8 inches, making 350 revolutions.

NEW LATHE PLANT.—It is announced that the American Turret Lathe Manufacturing Company will remove its plant from Wilmington, Del., to Warren, Pa. Work has already been begun on the new plant. The plans provide for an erecting shop 60 by 300, fitting rooms, storerooms, machine shop, power house, forge shop, offices, etc., giving a total of 75,000 square feet of floor area. All of the buildings will be one-story high and thoroughly lighted. In every particular the plant will be one of the most modern in construction and equipment that can be built. In addition to the lathes which the company now manufactures, the business will be extended to include other types of lathes, duplex milling machines and a variety of other tools. The entire management of the business is in the hands of the president and general manager, C. M. Conradson.

CONSOLIDATION OF ASBESTOS COMPANIES.—It is announced that the H. W. Johns Manufacturing Company, of New York, and the Manville Covering Company, of Milwaukee, Wis., each company having for a long time been closely identified in handling the goods manufactured by the other, have consolidated their interests. The capital stock of the company is $3,000,000, and the new company will be known as the H. W. Johns-Manville Company. The officers of the new company are: T. F. Manville, president; C. B. Manville, vice-president; George W. Gladwin, vice-president; F. R. Boocock, treasurer, and H. E. Manville, secretary. James G. Cannon will be chairman of the board of directors. C. R. Manville will be manager of the western department, and he, with C. B. Manville, will remain in Milwaukee. T. F. Manville and H. E. Manville will remove to New York. The new company is rapidly completing a plant at Milwaukee for the manufacture of carbonate of magnesia and mineral wool. When this plant is completed the company will be prepared to furnish a most complete line of all grades of steam pipe and boiler coverings and asbestos goods of all descriptions.

THE NEW STURTEVANT PLANT.—Work is rapidly progressing upon the foundations for the new plant of the B. F. Sturtevant Co., at Hyde Park, Mass. The buildings, including storage space between, will occupy a tract measuring in extreme dimensions about 500 feet by 700 feet. This will provide space for the foundry, pattern and pattern storage building and power plant as well as the machine shop, 120 feet by 500 feet, and a three story structure of the same length, both terminating in a large head house which will serve for the work of erecting, testing and shipping. The office will be a separate building of considerable dimensions.

PARSON'S MANGANESE BRONZE.—The Taunton-New Bedford Copper Company, New Bedford, Mass., which has a New York office at 77 Water street, and a Boston office at 61 Batterymarch street, is the sole manufacturer under license from Wm. Cramp and Sons' Ship and Engine Building Company for Parson's manganese bronze in this country. It is claimed for this metal that for great tensile strength, elasticity and elongation, coupled with unusual non-corrosive qualities, that it cannot be excelled. This bronze can be forged at a cherry-red heat. It is especially well adapted for hull plates for yachts and launches, and also for pump linings, condensers, rudders and other parts of a ship where non-corrosive qualities are desirable. In addition to being sold in rolled sheeets and plates, it is made in round, square and hexagon rods for studs, bolts, nuts, pump and piston rods, yacht shaftings, etc.

NAVAL ELECTRIC CO.—The Naval Electric Co., 95 Liberty street, New York, is just putting on the market something new in the line of searchlights, which is attracting much attention. This company devotes itself exclusively to marine matters and was first organized to introduce the Yale submarine electric lamp. This is a device which ought to be on board every vessel as well as convenient at every wharf, as it can be used in water for purposes of illumination. The Naval Electric Co. is also making a specialty of telephone, designed especially for use on ship or in other places where there is a large percentage of moisture in the atmosphere and where ordinary telephones will not work. An adaptation of the electric system used has been introduced in connection with submarine boats. This has already been tested and was recently investigated thoroughly by officers of the Imperial Russian Navy. The apparatus used in connection with this consists of a specially constructed kerosene oil engine connected to an electric generator to furnish a current for a number of Yale submarine lamps. The oil for the engine is contained in the base, which is made hollow for this purpose, and the whole set is very compact, permitting it to be placed in an ordinary ship's boat. It can readily be seen that this device can be used for submarine purposes, and in warfare it can be used to protect vessels from the attacks of submarine torpedo boats. This outfit of generating set and submarine lamps, being portable, is made of much value in cases of submarine diving and wreckage.

THRUST BEARINGS.—The Standard Roller Bearing Company, 2328 Market street, Philadelphia, Pa., is meeting with much success in introducing its thrust bearing, which was described in MARINE ENGINEERING for November, 1901. This company makes roller bearings in great variety and for all purposes. A special class of bearings is made for propeller shafts, upright shafts, worm gears, etc. Special bearings are also made to suit special conditions.

A FINE CATALOGUE FREE.—We are informed by M. H. Tarbox, treasurer of the Boston and Lockport Block Company, that he will have ready for delivery in a very short time one of the largest catalogues of blocks ever published. It will be very complete and thoroughly illustrated, and those of our readers who wish to be sure to secure a copy should send in their applications at once. This company is now well settled in its new quarters at 158-160 Commercial street, Boston, Mass., where the entire building, five floors and basement, has been especially fitted up for this company's business. On the first floor are the offices of the company, on the second floor sample room for pumps, trucks, differential hoists, etc.; on the third floor stock room for wooden, iron and steel blocks, and the fourth floor stock room for trucks. The company has greatly increased its stock of pumps and trucks. The company has transferred, as far as possible, its shipping department from the East Boston factory to its new store, thus saving about one day's time in shipments. A branch telephone exchange with two receiving lines has been installed, so that there is always opportunity for telephone communication.

CENTRIFUGAL OIL EXTRACTOR.—The Keystone Engine and Machine Works, Fifth and Buttonwood streets, Philadelphia, Pa., manufactures the well-known Simpson's centrifugal oil extractor. A small folder, issued by this company, states, regarding this extractor: "Extracts oil and foreign matter from the exhaust steam, thereby purifying it so that the water of condensation can be returned to the boilers, and will save from 40 to 60 per cent of the oil fed through the steam cylinder. It is constructed on the only correct principle—that is, separation by centrifugal force. There are no baffle-plates to obstruct the free flow of steam and create back pressure, as the flow of steam is continuous and takes a spiral course to the bottom, distributing the grease and foreign matter on the walls and surfaces during transit. They will be found very useful on any exhaust pipe of engine, and should be placed as near the engine as possible, particularly where it is desirable to use the oil over again. It is very desirable to return the water of condensation to the boiler, because it prevents the formation of scale, and where boilers have scale in them it will soon become soluble and can readily be blown off by the blow-off valve, but where the grease is not taken from the exhaust the water of condensation usually finds its way to the sewer, causing a great loss. No exhaust injector should be used without first passing the steam through the extractor."

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Our Flexible Steel Armored Conductors are endorsed by engineers for use in Marine or Ship Wiring, because of the high grade insulation, thorough protection from mechanical and other injuries, entire flexibility and low cost.

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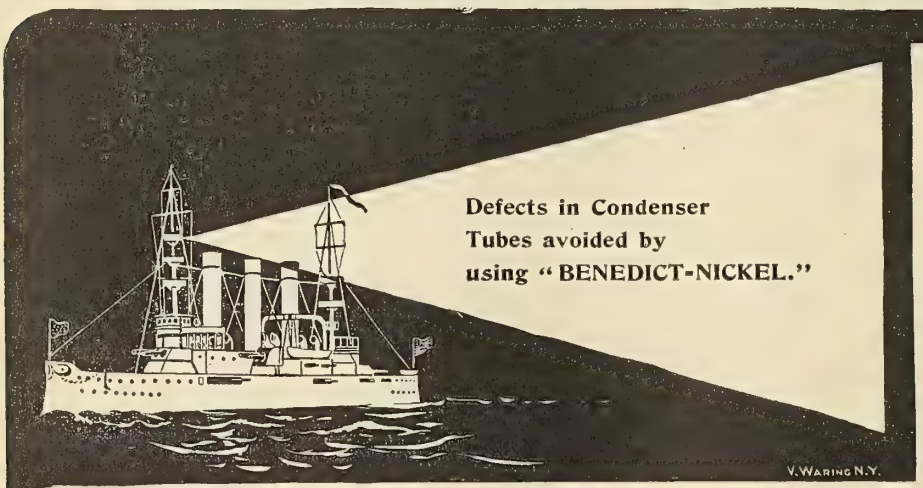
ALBERGER CONDENSER COMPANY.—The Alberger Condenser Company is a new company which has just been organized with Louis R. Alberger president, George Q. Palmer vice-president and B. W. Pierson secretary and treasurer. Offices have been opened at 95 Liberty street, New York. For marine service, the new company offers a new system of surface condensation which allows both a reduction in weight and cost of operation. This field is one in which Mr. Alberger has been doing special work for many years. Among the other specialties of the company will be condensing apparatus of all kinds, vacuum pumping machinery and cooling towers. Mr. Alberger was for thirteen years in charge of the condenser department of Henry R. Worthington.

EYNON-EVANS SPECIALTIES.—The Eynon-Evans Mfg. Co., 1515 Clearfield street, Philadelphia, Pa., has recently published catalogue No. 7, containing information regarding the engineers' and machinists' specialties it manufactures. The leading place is given to the Eynon-Korting compound injector, and its special qualities are set forth in a clear and convenient manner. Convenient tables are furnished of capacities for different steam pressure and conditions of use, as an aid to the buyer. This company also makes a leading feature of exhaust steam condensers, both separate and with combined pump. A compact type of surface condenser, the duplex air and circulating pumps is also offered, and this section of the publication is accompanied by a convenient table showing the gain by use of a condenser for engines of varying sizes and piston speed. Another leading feature is made of blowers for handling air and gases under all conditions. The apparatus offered under this head comprises special jet nozzles, belted and direct driven blowers; compressors and special types of exhausters; syphons, jet pumps, valves of various types and for various purposes, special pipe fittings, gauge cocks and various railroad specialties are also listed and described in this publication. Copies can be had free by the asking.



"BENEDICT-NICKEL" SEAMLESS TUBING

There is no risk of longitudinal fracture from internal stresses in condenser tubes made from "Benedict-Nickel." The spiral formation produced by our patented hot-rolling process of manufacture makes tubes of extreme strength and toughness, capable of resisting the greatest strain.

The composition of the metal enables "Benedict-Nickel" Seamless Condenser Tubes positively to resist Electrolysis.

Owing to its great density, extreme toughness and perfect homogeneousness, "Benedict-Nickel" can be used of much lighter gauge than brass or copper; consequently its condensing efficiency is much greater.

We are also large manufacturers of seamless brass and copper tubes made by the same process as "Benedict-Nickel."

Tobin Bronze has almost a world-wide reputation for marine purposes. We sell it at manufacturers' prices.

Send for treatise on "Electrolysis of Condenser Tubes."

BENEDICT & BURNHAM MFG. CO.,

Mills and Main Office, Waterbury, Conn.

New York, 253 Broadway. **Boston, 172 High Street.**

V. WARING, N.Y.

FIRM OF NAVAL ARCHITECTS.—Swasey, Raymond and Page have opened an office in the Colonial Building, Boston, Mass., as naval architects. Circulars are being sent out announcing that this firm is prepared to design vessels of all types for passenger and freight service, as well as tugs, yachts, etc. All three members of the firm have had experience with leading shipbuilders, and having secured control of the Taunton Yacht Works, Taunton, Mass., have established quite a trade for vessels of the smaller type in construction work. The firm already has in hand several sketches for steam yachts varying in size from 90 to 183 feet. Yachtsmen are invited to inspect these designs.

HEWSON'S STEAM TURBINE.—The Hewson Steam Turbine Company has recently installed an exhibit in the basement of the Bourse, Philadelphia, Pa., which attracts much attention. It consists of one of this company's multiple expansion cut-off steam turbines which operates a dynamo. The claim is made for this turbine that it uses the steam expansively from seven to ten times, and the guarantee is made that the turbine will not exceed 14 pounds of water to the horsepower per hour when running condensing. We understand that a boat has been under operation for some time in San Francisco harbor with one of these turbines for an engine.

FREE CORRESPONDENCE INSTRUCTION.—The American School of Correspondence, 156 Tremont street, Boston, Mass., notifies employers and others interested in the subject of correspondence instruction to inquire regarding the courses at this school. Through the generosity of the founders of the school and others interested, the trustees are enabled to offer each year in the engineering courses a few free scholarships to deserving, energetic and intelligent young men. The scholarships for 1902 are now at the disposal of the trustees, and applications will be considered from the readers of MARINE ENGINEERING. The course of study offers free instruction in marine engineering in all its branches, and includes, also, courses in heating and ventilation, free hand and mechanical drawing, etc.

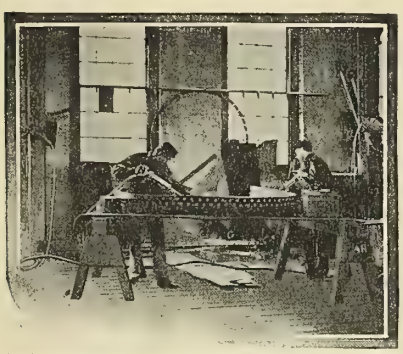
TWO NEW TUGS.—The Johnson Iron Works, New Orleans, La., are building for the Louisiana and Texas Railroad, a branch of the Southern Pacific, two steel tugs 112 feet length over all, 24 feet beam, 11 feet hold, each with two boilers of Scotch type and twin screw non-condensing engines, steam steering gear and steam windlass. Deck and houses of wood. One of these is nearly ready for launching, the other to follow a month later.

A LARGE MARINE RAILWAY.—The H. I. Crandall and Son Co., East Boston, Mass., recently built a large marine railway for W. A. Boole and Sons, San Francisco, Cal. In writing to the Crandall Company last month, the Messrs. Boole reported having just hauled out steamship *Tellus* of 2,522 tons. The steamship had 100 tons of water ballast and 300 tons of rock ballast, making the dead weight lifted over 2,900 tons. This feat attracted much attention on the Pacific coast, as the boat was hauled out in a fractional part of the time that would have been required had she been placed in dry dock.

ECONOMY IN LARGE SCHOONERS.—Frank N. Tandy, 31 State street, Boston, Mass., has recently made some interesting investigations into the subject of economy of large schooners. He has taken the statements of two four-masters and two five-masters which have been used in the Atlantic coast trade. Vessel No. 1 made twelve voyages, consuming 512 days to date. It paid dividends from $16 to $84 per 1-64 each trip, the total for the twelve trips figuring up $442 per 1-64, and she paid 38.8 per cent of her cost in that time. This vessel cost $72,960, gross tonnage is 1,904 and her carrying capacity is 3,000 tons. The three other vessels from whose statements data are compiled paid from $12 to $100 per 1-64 each trip, and the average for the fleet shows a dividend of $33 per 1-64 each trip and a yearly profit of 27.5 per cent on the investment to the owners. The net earnings have so far averaged 42.9 per cent of the gross receipts and 18.9 per cent of the total cost of the vessels has so far been paid.

"LITTLE GIANT" Pneumatic Hammers,

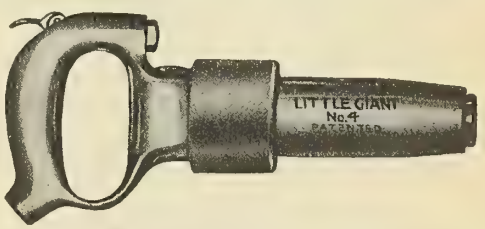
Used extensively in the United States, British, French, German, Russian, Spanish and Italian navy yards, and in the principal ship yards the world over. Greatest time and labor-savers of the 20th Century. Unexcelled for all classes of riveting, chipping, caulking, beading, etc. Made in eight different sizes.



"Little Giant" hammers chipping on steel boiler plate.

No Vibration. No Delicate Parts.

Made to withstand hard service.



Sent on trial. Express paid both ways if not satisfactory. Installation of complete air plants our specialty.

Write for Catalog "F." You will make no mistake if you order a "Little Giant."

Standard Pneumatic Tool Company

Manufacturers of Air Drills, Hammers, Reversible Flue Rolling, Reaming, Tapping and Wood Boring Machines, Motor Chain Hoists, and Pneumatic Tools and Appliances of Every Description.

General Offices and Works AURORA, ILL.

Eastern Offices, 141 Broadway, NEW YORK.

CHANGE OF LOCATION.—The sales offices of the Shelby Steel Tube Co. have been consolidated and transferred to the Empire Building, Pittsburg, Pa., and all orders or communications are hereafter to be sent to the Pittsburg office, as the New York and Chicago offices have been discontinued. The manufacturing facilities of this company are being steadily augmented and the company is now thoroughly equipped to care promptly and satisfactorily for any order. This company's steel tubes have been very extensively used not only in naval work but in much of the best merchant marine work.

THE SPECIALTY PAINT COMPANY.—The Specialty Paint Company, whose office is in the Park Row Building, New York, is meeting with much success in extending the sale of its several specialties. These include marine coating, which is designed to effectually prevent fouling and corrosion on ships' bottoms, marine cement which prevents the crustation of metal and forms a foundation for other paints, and a fireproof paint which has proven very valuable as a fireproof coating on woodwork on board vessels, as well as on wharf building and elsewhere. Further information regarding these specialties can be had from the company.

DOWN-DRAFT FORGE SHOP EQUIPMENT.—Some years ago the Buffalo Forge Company, Buffalo, N. Y., installed for the "Big Four" railroad a down-draft forge shop equipment in the company's shops at Wabash, Ind. Recently, Superintendent of Motive Power Garstang addressed a letter to the Buffalo Forge Company, enclosing copy of a letter to the Embree McClean Carriage Company, St. Louis, Mo., in which he stated: "Our Wabash shop is equipped with the Buffalo Forge Company's down-draft forges, which have been in service now for several years. I consider them a success, and especially so in so far as keeping the shop free from smoke and gas is concerned. For the class of work that I imagine is done in a carriage shop I do not believe there is any forge better adapted for this service than the one in question."

NEW STEAM SPECIALTY FIRM.—M. A. Hudson and H. S. Whitney, formerly connected with one of the largest machinery supply houses in New York, are representing in New York and vicinity the Standard Gauge Manufacturing Company, Syracuse, N. Y.; J. E. Lonergan and Company, Philadelphia, Pa., and the Penberthy Injector Company, Detroit, Mich. They have offices at 141 Broadway.

TUBAL MANGANESE BRONZE.—The tubal manganese bronze manufactured by Paul S. Reeves and Son, Philadelphia, Pa., is proving one of the most desirable metals for use for propellers, piston rods and other such marine uses. The United States Government recently made a test of the castings from this metal, each casting weighing 4,200 pounds. This test gave the following results: Ultimate, 82,340; elastic limit, 33,400; elongation, 31.5; reduction, 31.80. The minimum test was: Ultimate, 78,680; elastic limit, 38,300; elongation, 27; reduction, 27.8. This metal is sold by the Messrs Reeves in ingots or castings up to 20,000 pounds in weight. Users of bronze can readily secure complete data regarding this special make upon inquiry of the manufacturers.

REMARKABLE TRIP OF A LAUNCH.—President P. E. Remington, of the Remington Automobile and Motor Co., Utica, N. Y., in company with L. M. Graham, treasurer, left Utica one Saturday morning in a 20 foot launch equipped with one of this company's standard four horse power motors. Their destination was New York City, and Mr. Graham writes that they reached One Hundred and Fifty-fifth street at 8 o'clock Monday night, making the run of 250 miles in thirty hours running time. The trip down the Hudson River in such a small boat was somewhat perilous, as both wind and tide were against them much of the time. This will show that the boat made an average speed of little over eight miles an hour. No trouble was experienced with the motor in this long run, and Mr. Graham states that so far as he could determine the motor did not miss a spark from the time he left Utica and arrived in New York.

STANDARD SEAMLESS TUBE CO.

MANUFACTURERS OF

Seamless Cold Drawn Steel Tubing

In all sizes from ⅛ to 16 inches diameter.

BOILER TUBES
FOR ALL CLASSES OF MARINE WORK

Stay Tubes. Water Grates. Compressed Air and High Steam Pressures.

Hollow Shafts, Bushings, Hydraulic Tubes, etc., etc.

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Foreign Office—Dock House, Billiter Street, London, E. C., England

PAN-AMERICAN HONORS.—Charles J. Bogue, of 217 Centre street, New York City, received honorable mention by the Committee of Awards at the Buffalo Exposition for search lights.

DRILLING MACHINES IN STOCK.—H. G. Barr and Company, Worcester, Mass., carry in stock what is claimed to be the largest line of sensitive drilling machines in the country, comprising sixteen distinct styles. At the present time they report business good. The drills in stock for immediate delivery are two spindle, four spindle, and three styles of single spindle drills; others are on the floor. Readers can write them for prices if they want tools of this kind.

BUCKLEY WATER TUBE BOILERS.—The Rochester Machine Tool Works, Rochester, N. Y., which for many years has been manufacturing the well-known Buckley water tube boilers, has largely increased its facilities for manufacturing these boilers. Mr. Charles V. Grohs has been made secretary of the company. Orders have just been received for two large size boilers which are to go to Seattle, Wash. Last month a duplicate order was received by cable from England for some of these boilers.

NEPTUNE BOILER COMPOUND.—The Engel and Fagersten Chemical Co., 1702 Wabash avenue, Chicago, Ill., announces the receipt of another large order for Neptune Anti-Fouling Compound from the North German Lloyd Steamship Co., also very encouraging reports from tests made on the steamers of the United Fruit Co., as well as by other steamship companies. This company has made a specialty of a compound for boilers where it is necessary at any time to use salt, brackish or sweet water. Full information regarding the compound is sent to all inquirers upon application.

SCHOONER YACHT FOR EMPEROR WILLIAM.—The Townsend and Downey Shipbuilding and Repair Co., whose offices are in the Produce Exchange Building, New York City, recently closed a contract to build a schooner yacht which has been ordered by Emperor William of Germany. The first keel plates were laid early in October and the frame work of the yacht is now pretty well under way. The steel frames are made by the Passaic Iron Works, Passaic, N. J., and the plates are furnished by the Tide Water Steel Co., Chester, Pa.

NEW BOILERS FOR STEAMSHIP NORTHWEST.—The steamship *Northwest*, of the Northern Steamship Company, which runs between Buffalo and Duluth, is to have installed on board this winter a set of Scotch boilers, in place of the Belleville boilers, which have been in use for several years. The new boilers are designed and will be built by the Eastern Shipbuilding Company, New London, Conn., and consist of three double ended boilers, with six furnaces, and four single ended boilers, with three furnaces. The total heating surface is 22,500 square feet, and the total grate surface is 650 square feet. The boilers are to be built for a working pressure of 210 pounds. It is understood that the sister ship, the *Northland*, will have similar boilers installed in the near future.

SPECIAL NOTICES.

Announcements under this heading will be inserted at the uniform rate of thirty-three-and-a-third cents a line. Lines average ten words each.

PERMANENT POSITION WANTED.

A permanent position is desired by a man of the widest experience in naval and mercantile ship and machinery design and construction. Competent and willing to devote his best efforts to the interests of a modern shipyard in the direction of designing, estimating, cost accounting, piece work detailing, increasing the output of men and tools, advertising or specializing on certain classes of work, as required by the policy of the concern. Address, "EARNEST EFFORTS," care Marine Engineering.

GOLD MEDAL FOR MORISON FURNACES.—A gold medal has been awarded the Continental Iron Works, Brooklyn, N. Y., for the Morison Suspension Boiler Furnaces, exhibited at the Pan-American Exposition. These furnaces are in great favor for land and marine boilers. It is claimed that their form of construction offers the greatest possible resistance to distortion or collapse and a freedom from leakage not to be obtained in furnaces which consist of sectional flanged and riveted cylinders, with reinforcing rings interposed between the flanged, or any other method. The Continental Iron Works are the sole manufacturers in this country for the Morison furnaces.

HOT WATER PACKING.—After exhaustive tests covering a period of two years, the H. W. Johns-Manville Co., 100 William street, New York, has placed on the market a packing to be used on plungers and rods of pumps, delivering water at a temperature above 180 degrees F. In every test which has been made this packing is claimed to have lasted six times as long as any other packing subjected to the same conditions. The Kearsarge-Asbesto-Metallic packings produced by this company are meeting with ever-widening favor, and the success of the entire line of packings offered for high pressure and high speed engines is sufficient guarantee of the value of any new packing which may be offered.

HAWKINS' WORKS
for
Progressive Engineers
on
Steam and Electrical
ENGINEERING
6 VOLUMES IN SET FOR $11.
Terms $1.00 a Month.
Write today for particulars
Theo. Audel & Co. Pub.
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WESTON STANDARD PORTABLE
DIRECT-READING

Voltmeters, Ammeters, Millivoltmeters, Voltammeters, Milliammeters, Ohmmeters, Portable Galvanometers, Ground Detectors and Circuit Testers.

Our Portable Instruments are recognized as **the standard** the world over. Our **Voltmeters** and **Ammeters** are unsurpassed in point of extreme accuracy and lowest consumption of energy.

WESTON ELECTRICAL INSTRUMENT CO.,
Waverly Park, Essex County, N. J., U. S. A.

BERLIN:—European Western Electrical Instrument Co., Ritterstrasse 88.
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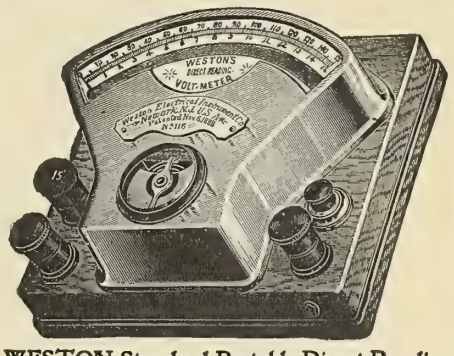


WESTON Standard Portable Direct Reading Voltmeter.

The Peerless Spiral Piston and Valve Rod Packing

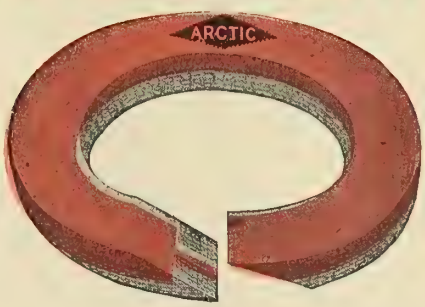
It will hold 400 lbs. of steam

Once tried always used

Will run twelve months in high speed engines

Arctic Packing

To be used exclusively for packing Ammonia Pumps



This packing is made in several hundred sizes

This packing is specially constructed for ice machine service, of layers of rubber and plies of duck which are so arranged and laid as to best resist the actions of ammonia, cold and heat.

The duck is a specially made duck, frictioned with an entirely new compound heretofore unknown to the rubber trade, and the core and back is of the celebrated Rainbow Packing compound, which is specially adapted to resist ammonia, cold and heat.

This packing is constructed on a strictly scientific basis, and the results obtained thus far have demonstrated fully its value for ammonia packing.

This packing is made in several hundred sizes. The rings may be slipped onto the rod very readily.

The usual rule is to be observed in giving measurements, the depth and width of stuffing box and size of piston rod, in order to get the size desired.

Sole Manufacturers of the

Celebrated Rainbow, Eclipse Sectional Rainbow Gasket, Hercules Combination and Honest John Packings.

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" 101, Thos. J. Hanlon, Box 765, Norfolk, Va.
" 102, Fred W. Linsemeyer, 210 Clinton St., South Haven, Mich.
" 103, C. H. Hall, Box 512, New Berne, N. C.
" 104, J. H. Blumer, Moss Point, Miss.

TRADE PUBLICATIONS.

The Holland Torpedo Boat Co., Elizabethport, N. J., is desirous of obtaining catalogues and circulars from manufacturers of and dealers in tools and supplies pertaining to machinery and ship work. Catalogues of standard size for filing are preferred.

The Marine Iron Works, Clybourn avenue and Southport street, Chicago, lost all of its catalogues in the fire which destroyed the company's plant several weeks ago, and would like to receive copies of all catalogues and circulars of value to a concern which builds wooden and steel hulls, engines, boilers and other marine specialties.

A neat desk blotter is being distributed by the American Valve Co., Coxsackie, N. Y., upon which are pictures of this company's gate valve disks.

The exhaust heads and steam traps manufactured by the B. F. Sturtevant Co., Jamaica Plain, Mass., are briefly described in catalogue No. 19, which is now being distributed. It comprises eight pages and contains the necessary illustrations and descriptive matter and other data to fully describe each device.

Users of riveting machines will want a copy of the ten-page folder issued by John F. Allen, 370 Gerard avenue, New York City, describing his riveting machines of different types. A number of names of large users of these riveters is given, and a glance at the folder will show that they are of a type which would be very well adapted for use in shipyards, boiler shops, etc.

The universal wood trimmers which the Fox Machine Co., Grand Rapids, Mich., manufactures will be found fully illustrated and described in catalogue No. 16, which is now being distributed. The design and operation of these cutters are fully shown by the many illustrations, and their usefulness in boat shops, pattern shops, joiner shops and other wood-working shops will be readily appreciated. Copies of the catalogue can be had upon application.

Users of wood-working machinery will receive a neat catalogue if they write to the American Machinery Co., Grand Rapids, Mich., and refer to MARINE ENGINEERING, describing the Oliver wood trimmers, universal saw benches and other wood-working tools. This catalogue shows a line of machinery especially adapted for use in launch and yacht building establishments, in pattern shops, joiner shops, etc. The catalogue is very neatly printed on coated paper, and the illustrations are brought out exceptionally well.

The Edwards patent air pump for marine engines is one of the recent specialties of the Wheeler Condenser and Engineering Co., 120 Liberty street, New York. The company is now distributing a catalogue which tells fully about this pump. The catalogue is 6 by 9 inches in size, neatly printed, and contains a number of engravings of pumps showing, by means of sectional views, its construction and manner of operation. The special advantages claimed for this pump are: that there are no foot or bucket valves; that no door is required in the barrel; that few spare parts are required; that all valves are accessible, etc. Copies of the catalogue can be had by addressing the manufacturer.

The twist drills, reamers, chucks, spring cotters, taps, flat spring and rivet keys, milling cutters and other tools which the Standard Tool Co., Cleveland, Ohio, manufactures will be found thoroughly described and completely illustrated in this company's 1902 catalogue. This catalogue comprises 224 pages, and it can be readily seen that it is very thorough and that many specialties are described when it is stated that the index alone covers five pages. Nothing seems to be overlooked which a user of any or of all these specialties would want to know, and, in addition, there are many tables of useful information, so that altogether the catalogue is very valuable to any who use tools or have to do in any way with engineering work.

A Short Story of James Watt and the Steam Engine is the title to an 8-page booklet which Wyman and Gordon, Worcester, Mass., are distributing. On the back page of the booklet is a brief reference to this company's drop forgings and other specialties.

Lundell Electric Motors for Hospital Service is the title to bulletin No. 208, copies of which can be had from the Sprague Electric Co., 527 West Thirty-fourth street, New York City. It refers especially to small electric motors for use in surgical operations and fan motors of different types and sizes.

The National Automatic Lubricator is described in a pocket-size catalogue now being distributed by the National Lubricator Co., Albany, N. Y. A number of illustrations show the design of the lubricator, and the text describes fully the manner of its operation. The sight feet adjustment has separate illustrations and descriptions. Any one interested can have a copy by referring to MARINE ENGINEERING.

Marine engines, hoisting engines, ship windlasses and other specialties manufactured by the Marine Iron Co., Bay City, Mich., will be found described in a special catalogue which this company now has ready for distribution. It is 5 by 8 inches in size, well printed, and contains illustrations of various specialties referred to. Most of the illustrations are of considerable size, and the text is complete, so that each specialty is sufficiently described to give an excellent understanding of it.

Users of portable forges will want to send for a copy of the catalogue issued by the Empire Forge Co., Troy, N. Y., which has just been issued as catalogue No. 29. This business was established in 1835, and the purpose of the company is to manufacture "the best in the world." Especial claim is made for these forges that they are heavy, strong and portable; have bronze bearings; no dead centers; do not use belts, and that there is no back motion; also, that, being made almost entirely of metal, they will wear much longer than most forges, and not be seriously affected by fire and water. Many illustrations show forges for all purposes, and each variety is described by itself. The catalogue comprises 48 pages.

The 1902 Nautical Almanac published by Riggs and Brother, 310 Market street, Philadelphia, Pa., is now ready for distribution, and as no price is mentioned we infer that copies can be had by writing to the company and mentioning MARINE ENGINEERING. The almanac is 6 by 9 inches in size, neatly bound in heavy paper cover, and comprises 162 pages. It contains a vast amount of information regarding nautical subjects, and is, as its name indicates, a thoroughly nautical almanac. There is a great deal of matter in it which every person must know who has anything to do with yachts or vessels of any kind, such, for instance, as information regarding tides, speed trials, distances, measurements, information regarding the sun, moon and stars, pilot matters, rules to prevent collisions at sea, rules for vessels both at sea and inland waters, and the like.

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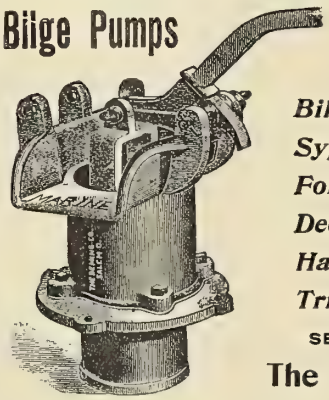

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Syphon Pumps,
Force Pumps,
Deck and other
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either metal or wood, with woven wire mattress or other spring mattress attached; or

Woven Wire or National Link Mattress only,

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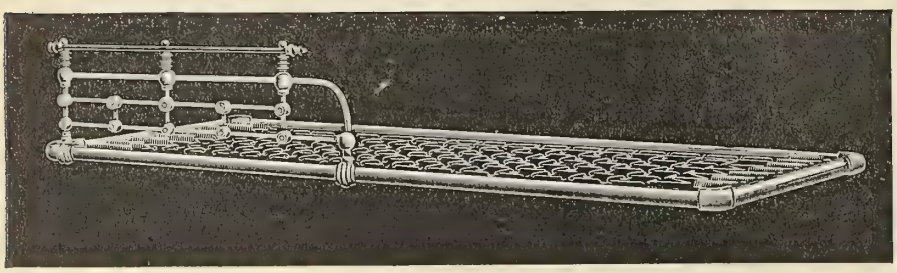
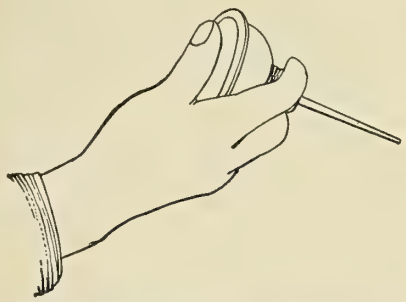


We manufacture the most approved articles for these uses, and will furnish anything to specification desired, of any dimensions, and of any irregular form required. Address for any information as above, and mention this journal.



The Nicest Thing

You can use is

DIXON'S

Pure Flake

GRAPHITE

in an ordinary

SQUIRT CAN.

For valves and cylinders and all bearings there is nothing to equal Dixon's graphite. Sample free.

JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J.

Cadman's Indestructible Blow-Off Valve is described in catalogue B, copies of which can now be had from A. W. Cadman Manufacturing Co., Pittsburg, Pa. A picture of the valve is shown, printed in black and bronze, so that the special features of the valve are very graphically shown. The descriptive matter is right to the point.

The American Valve Co., Coxsackie, N. Y., is distributing an advance booklet devoted to its valves and other specialties. The booklet is neatly printed and bound as a regular catalogue. It comprises 27 pages, and contains many illustrations of the different valves this company manufactures, together with tables of sizes, capacities, prices, etc., and the many illustrations add much to its value. Copies can be had upon application to the company. Users of valves will be particularly interested in the special features of the gate valve which this company manufactures.

The Renold high-speed, silent-driving chain is a new specialty which the Link-Belt Engineering Co., Nicetown, Philadelphia, Pa., is now putting on the market. The company is distributing a catalogue which tellls in a very graphic manner the special features of this chain. There are many illustrations showing the construction of the chain and applications of it.

Those of our readers who understand French will probably be able to secure from the Standard Pneumatic Tool Co., Aurora, Ill., a catalogue which this company has just issued regarding its "Little Giant" tools and appliances, which is written in French. It is a very neatly printed catalogue, and gives innumerable illustrations of pneumatic tools and other apparatus.

Automobile Appliances is the title of the latest catalogue issued by the Mason Regulator Co., 158 Summer street, Boston, Mass. It is neatly bound in gray paper cover. There are about 40 pages, and, like all of the publications of this company, it is well designed and well executed. There are many illustrations of different accessories which this company manufactures, and complete pictures of the "Mason" automobile engine.

A Modern Method of Steam Making is the title of a pocket-size catalogue issued by F. J. Gast, 26 Cortlandt street, New York, describing Gast's asbestos air-cell coverings. The catalogue comprises 24 pages, giving a thorough description of the various asbestos coverings which Mr. Gast manufactures. A number of illustrations show the manner in which the covering is applied to steam pipes and for other purposes. There are also several pages of testimonials, together with tables of prices, etc.

The marine gas engines of the Wolverine Motor Works, Grand Rapids, Mich., have a neatly printed catalogue of 32 pages devoted to them. The catalogue is 6 by 9 inches in size, neatly bound in embossed cover. The body of the catalogue is printed in two colors and contains, besides full-page illustrations, many pictures of individual parts of the engine. Very few gas engine catalogues describe in as much detail as here given the design and construction of engines. The pictures include engines from single cylinder one-horse power to three cylinder 18-horse power.

The gauges of all kinds, thermometers, marine clocks, engine counters, air cocks, pop safety valves and other specialties manufactured by the Standard Gauge Manufacturing Co., Syracuse, N. Y., are thoroughly illustrated and described in an exceptionally complete catalogue which the company is now distributing. The catalogue is about 6 by 10 inches in size, neatly bound in dark green cover, embossed and printed in silver, and comprises 90 pages, including a complete index. Each specialty is illustrated with an excellent wood cut, and accompanying it are tables of sizes, prices, etc. The catalogue is one that should be in the hands of every ship and engine building concern, as well as every engineer.

Walworth Mfg. Co., 130-136 Federal St. BOSTON

Specialty of BRASS VALVES and Fittings for Marine Construction

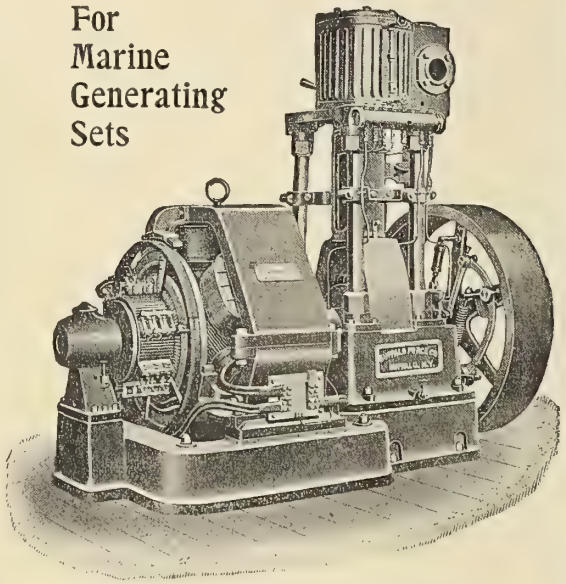
Extra Heavy Valves, Bent Pipe and Fittings for High Pressure Work

Sole Manufacturers of Van Stone Pipe Joint Which does not Weep under heavy pressure

Send for Catalogue N. Y. Office: Park Row Building Prices and Terms on Application

Buffalo Marine Engines

For Marine Generating Sets



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BUFFALO, N. Y.

NEW YORK OFFICE, 39 Cortlandt Street

FRESH SNOW

Makes most white paints look anything but white. The only white paint that will bear comparison with the dazzling whiteness of new fallen snow is pure

ZINC WHITE.

Read our Practical Pamphlets:—

"PAINTS IN ARCHITECTURE."
"THE PAINT QUESTION."

Free to Any Address.

New Jersey Zinc Co.,
11 Broadway,
New York.

"The Submarine Sun" is the manner in which the Naval Electric Co., 95 Liberty street, New York, refers to the Yale submarine electric lamp in a six-page folder which is now being distributed. A picture of the lamp is given, and also much information regarding its use for submarine work. There is also a letter from the Russian naval attache referring to tests which were made of it.

The Oscar Barnett Foundry Co., Newark, N. J., is now distributing catalogue G, which is combined catalogue and price list of this company's specialties. The catalogue is a very neat one, printed in two colors, and gives a great deal of information regarding brass molders, flasks and foundry equipment. There are many illustrations, and altogether the catalogue is one which would be very valuable for reference for any one connected with foundry work.

The stocks and dies, round adjustable die plates, taps, dies and threading tools manufactured by Holroyd and Co., Waterford, N. Y., will be found fully described and illustrated in the catalogue which this company issues. The catalogue is about 6 by 9 inches in size, and comprises 48 pages with index. There are many illustrations, together with tables of sizes, prices and such other information as the user of any of these specialties would want to know. The catalogue is a most excellent one for purposes of reference.

The Eddy Valve Co., Waterford, N. Y., issues one of the finest valve catalogues we have ever seen. It is about 6 by 9 inches in size, is bound in heavy board cover and comprises 256 pages. It is devoted exclusively to the many specialties of this company, which include the Eddy taper seat and the Eddy parallel seat valves, check valves and many other types. The catalogue contains a very complete index, covering many pages, and is very thoroughly illustrated. The completeness of the book probably prohibits general distribution, but to any one who has use for a reference book on the subject of valves a copy will be of great value.

A large mailing card is being distributed by the Globe Iron Works Co., 2428 University avenue, S. E., Minneapolis, Minn., upon which are pictures of four types of gas engines manufactured by this company, and of a thirty-foot launch, together with brief descriptive matter.

Users of marine glasses should send for a copy of the booklet issued by the Warner and Swasey Co., Cleveland, Ohio. They will find much information regarding the new prism glasses, and they will be surprised at the value of these glasses for use in studying the stars at night. It is also particularly interesting to learn the manner in which the prism glasses are constructed and why they are so much more powerful than the former style of marine glasses.

Marine gasolene engines and power launches, manufactured by Smalley Brothers and Co., Bay City, Mich., will be found nicely illustrated and described in a neat catalogue which this company is distributing. The cover is of heavy paper, upon which is embossed a picture of this company's engine. A number of illustrations are shown of the engine, so that its design can be fully comprehended, and sectional views explain the manner of its construction and operation. The igniter which this company employs is also fully described. Any one interested in gas engines will find this catalogue well worth possessing.

The Newhall Ship Chandlery Co., 78 South street, New York, is sending out a mailing card descriptive of the shackles which it manufactures. This card announces that the company manufactures anchor shackles with screw from a diameter of a quarter of an inch to a diameter of an inch and a quarter, and chain shackles with screw of the same sizes. These shackles are also made with pins, if preferred. The prices are given on the mailing card, both for galvanized shackles and for black iron. The claim is made that in quality and finish these shackles are equal to the best, and that the prices are as low as the lowest.

Electric Locomotives for manufacturing establishments is the title of pamphlet No. 0-113, now ready for distribution by the C. W. Hunt Co., West New Brighton, Staten Island, N. Y. It is a 12-page pamphlet, and contains a number of illustrations of different types of electric locomotives, and gives much descriptive matter, such as the user of one of these locomotives would seek.

Tool racks, lathe pans, shelving and other machine shop furniture manufactured by the New Britain Machine Co., New Britain, Conn., are described in a 20-page catalogue now ready for distribution. The catalogue is well-printed, and, as each of the devices referred to is neatly illustrated, the catalogue is one which should interest a great many of our readers, especially those connected with shop work.

The Howard hydro-carbon motors, manufactured by the Grant-Ferris Co., Green Island, Troy, N. Y., are described in a very neatly printed and well-arranged catalogue. The catalogue is bound in heavy paper cover, richly illuminated, and the text is in two colors. There are many neat illustrations and much information regarding this engine, both two-cycle and four-cycle. Any one interested in the subject of gas engines for launches, automobiles or other stationary work will find a copy of this well worth careful study.

Drafting Room Furniture is the title to a catalogue being distributed by the J. G. Alexander Manufacturing Co., Grand Rapids, Mich. The catalogue shows that this company manufactures different styles of drafting tables, folding drawing tables and other such specialties. As these are of particular interest for use in drafting rooms and ship and engine shops, and elsewhere, the catalogue will interest a great many of our readers. We understand that copies can be had gratis by referring to MARINE ENGINEERING.

Star foot and power lathes and other specialties made by the Seneca Falls Manufacturing Co., Seneca Falls, N. Y., are described in a recently issued catalogue 18-B. The catalogue is neatly printed, with cover in two colors, and the various tools are illustrated and described to good advantage. These include lathes such as would be used in small shops and in repair shops on board vessels, also lathes of larger sizes with various accessories. Copies can be had by referring to MARINE ENGINEERING.

Stevenson's sea guide and yachting manual for 1902 is now ready for sale by Gardner and Cox, 1 Broadway, New York. It is a pocket size, cloth-bound book of 168 pages, and contains a great deal of information regarding sea and yachting matters, such as every yachtsman and other seafaring men would want to know. To go into the full table of contents would occupy a great deal of space, but the preface states concisely the purpose of the book, namely, that of placing before those who are fond of the water a compendium of information, such as tide tables, directions for entering harbors, statistics of the deep sea, as well as of the heavenly bodies by whose aid vessels are steered. The price of the book is given as 25 cents.

For Steam Making Refrigerating Apparatus
MECHANICAL THERMOMETERS
HOHMANN & MAURER MFG. CO.
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NEW YORK 85 Chambers Street
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LONDON 57D Hatton Garden

The hydraulic steering gear and duplex steam pumps manufactured by the Queen City Engineering Co., Buffalo, N. Y., are illustrated and described in a catalogue which this company is now distributing. A number of illustrations show graphically the construction of the steering engine. This company also manufactures other lines of specialties, including boiler feed pumps and other types of pumps. These are also illustrated and well described.

The steam hammers manufactured by the David Bell Engineering Works, Buffalo, N. Y., have a neat catalogue devoted to them which is now being distributed. These hammers, as stated in the catalogue, are designed especially for use in boiler shops, engine shops, together with other places where hammers are called for. A number of illustrations are given, showing hammers of different sizes and styles, and there is a long list of users of the hammers, together with letters from many users.

Perfection in Electric Lighting is the title to a catalogue now being distributed by Enberg's Electrical and Mechanical Works, St. Joseph, Mich. The catalogue is 6 by 9 inches in size, bound in a light green cover, neatly printed in a darker shade. The electric lighting sets which this company manufactures are shown from several points of view, so that the design of the set can be fully understood. The special features of both the engine and the dynamo are concisely described. Brief reference is also made to the electric search-light which this company manufactures.

MODERN WIRING
Our Flexible Steel Armored Conductors are endorsed by engineers for use in Marine or Ship Wiring, because of the high grade insulation, thorough protection from mechanical and other injuries, entire flexibility and low cost.
Send for descriptive bulletin No. 40115.
SPRAGUE ELECTRIC COMPANY
General Offices: 527-531 West 34th Street, New York.
BRANCH OFFICES: CHICAGO: Fisher Bldg. ST. LOUIS: Security Bldg. BOSTON: 275 Devonshire Street. BALTIMORE: Maryland Trust Bldg.

Cadman's aluminum babbitt metal is illustrated in color on a small desk blotter which is being distributed by the A. W. Cadman Manufacturing Co., Pittsburg, Pa.

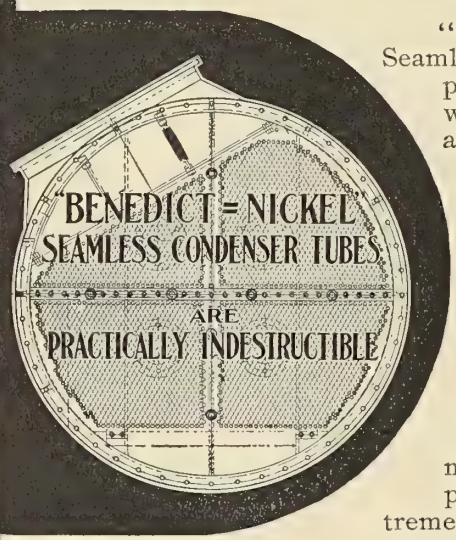
Chain Machinery is the title to the latest catalogue issued by the Turner, Vaughn and Taylor Co., Cuyahoga Falls, Ohio. It is neatly printed, and contains illustrations of this company's chain hammer and other tools, with descriptive matter, giving much information regarding machinery for manufacturing chains of various sizes.

Perry packings will be found fully described in the 1902 catalogue which La Favorite Rubber Manufacturing Co., Paterson, N. J., will send to all inquirers. The catalogue is a compact pocket-size and comprises 20 pages, including brief diary. Reference is made to the different kinds of packing which this company manufactures, and the necessary information regarding sizes, etc., is also given.

Stephenson steam specialties is the title to a new folder issued by the Stephenson Manufacturing Co., Albany, N. Y., describing the automatic force feed cylinder lubricators, the flue cleaners, bar belt dressing and other specialties manufactured by this company.

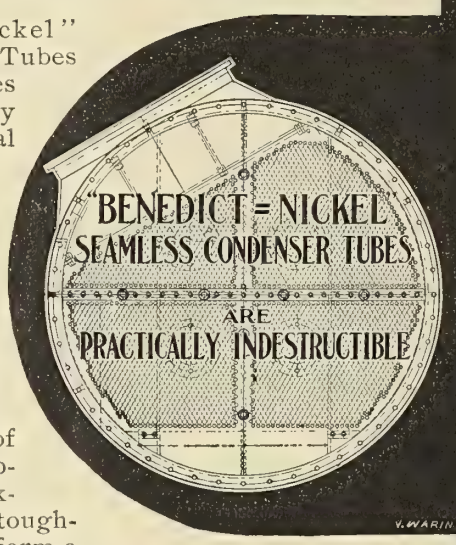
The gasolene motors manufactured by the Buffalo Gasolene Motor Co., Buffalo, N. Y., will be found fully described in the catalogue which this company will send to all inquirers. The special features of this engine are fully emphasized, and a number of illustrations are given, so that the type of the engine can be readily comprehended. Different features of the engine are described separately, so that all together one who wishes to purchase a gas engine can post himself readily from this catalogue. A number of pictures are given of launches complete, showing the manner in which the engines are installed. There is also quite a little information regarding the use of these engines for automobile purposes.

"BENEDICT=NICKEL" is peculiarly adapted for Condenser Tubes



"Benedict-Nickel" Seamless Condenser Tubes possess qualities which strongly appeal to naval authorities, large shipbuilders and consulting and designing engineers.

The inert nature of the metal (an alloy of nickel and copper) and the extreme strength and toughness of the tubes, form a combination which positively resists Electrolysis.



The life of "Benedict-Nickel" Seamless Condenser Tubes being almost indefinitely long, they are far more economical in the long run than copper or brass—these having frequently to be renewed.

"Benedict-Nickel" Seamless Condenser Tubes are spirally formed like a twist gun barrel. They are hot rolled from a solid billet,—not cast on a core.

They can be used 25 per cent. lighter than copper or brass tubes and have therefore a much greater condensing efficiency.

We can supply copper and brass seamless tubing made by the same process as "Benedict-Nickel" seamless tubes, where it is desired, as we are among the largest manufacturers of the same; but we recommend "Benedict-Nickel" on account of its longer life.

We sell **Tobin Bronze** at manufacturers' prices. This has an almost world-wide reputation for marine purposes.

Send for treatise on "Electrolysis of Condenser Tubes."

BENEDICT & BURNHAM MFG. CO.,

Mills and Main Offices, Waterbury, Conn.

New York, 253 Broadway. Boston, 172 High Street.

V. WARING N.Y.

The interior telephone system, manufactured by the Holtzer-Cabot Electric Co., Brookline, Mass., will be found neatly illustrated and described in a pocket-size booklet which the company is now distributing. It is a neat specimen of printing and quite a novelty as a catalogue.

Dixon's Automobile Graphites is the title to the latest publication issued by the Joseph Dixon Crucible Co., Jersey City, N. J. The title rather limits the booklet to a specific field, but, as the subject is one of lubrication, it will equally interest those who have charge of engines or machinery of any kind.

Bradley power hammers and forges, as manufactured by the Bradley Co., Syracuse, N. Y., are briefly described and well illustrated in a neat eight-page catalogue now ready for distribution. As forging is such an important feature of marine work, many of our readers will find a copy of this well worth looking over.

Some Sportsmen's Specialties is the title to a catalogue now being distributed by A. H. Funke, 101 Duane street, New York. Quite a number of rifles are shown, and they are well illustrated in the catalogue. There are other firearms of different types, also camping lamps, acetylene search-lights, acetylene cabin lamps for use on yachts, sailing vessels, etc.

The Dean boiler tube cleaner, manufactured by the William B. Pierce Co., 327 Washington street, Buffalo, N. Y., is described in a folder recently issued, which also contains the verdict of those who have tested and used this instrument. The list of testimonials embraces many of the large manufacturing and power establishments in the country, and all speak favorably of the results obtained

Calendars Received.

The E. M. Dart Manufacturing Co., Providence, R. I. This is printed in three colors, with pictures of this company's couplings and flanges. At the top is: "There is strength in our union." This saying is illustrated by a sketch of bride and groom.

C. W. Trainer Mfg. Co., 89 Pearl street, Boston, Mass., a large calendar about 24 by 30 inches in size. It is printed in three colors, with a sheet for each month, and at the top of each sheet is a picture of the steam pipe covering manufactured by this company.

ENGINEERING DATA.

There has been such a demand for engineering data in compact form that we have established a bureau for this purpose.

The plan is to supply 20 cards a month. These cards are to give information regarding new vessels, such as has appeared in the columns of MARINE ENGINEERING and in other publications; also, complete data regarding riveting, labor costs per ton dead weight in England and on our Great Lakes; data regarding boilers of different types; dimension weights and horse power per ton of various types of vessels; fuel economy on large ships per one hundred-ton miles; prices of battleships for the United States Navy per knot ton and per horse-power ton; similar data regarding cruisers and other naval vessels, etc.

This service will include 20 cards a month, or 240 cards a year. The price is as follows:—

One year	$4.00
Six months	3.00
Three months	2.00

In many instances special data can be furnished, when desired, at a slight advance in cost.

Fuller information regarding this service can be had upon application to

MARINE ENGINEERING,

309 Broadway, New York City.

The Syracuse Smelting Works, whose New York office is 94 Gold street, issue a calendar lithographed in several colors. Reference is made to the several specialties of this company, and in the center is a picture of two girls coasting on a tandem bicycle.

The Ross Valve Co., Troy, New York, sends out a handsome leather case, in which there are card calendars for each month in the year. Each card is neatly printed in two colors, and some reference to this company's business is printed inconspicuously on each one.

Wilson & Silsby, Rowe's Wharf, Boston, Mass., issue a calendar at the top of which is a handsome engraving of the yacht *Independence.* There is also given on the calendar a list of many famous yachts, the sails of which were made by this firm. The calendar contains tide tables for Boston and New York.

The Moran Towing Co., 10 South street, New York. This calendar is about 6 by 10 inches in size, and has a sheet attached for each month, upon which tide tables for Sandy Hook, Governor's Island and Hell Gate are given. At the top of the calendar is a brief reference to the business of the Moran Company.

Cousens and Pratt, 410 Atlantic avenue, Boston, Mass. This calendar has three fine engravings of sloop and schooner yachts, and a brief reference to the fact that this company's business is yacht sailmaking. Attached to the center are calendar sheets, also forenoon and afternoon tides in New York harbor.

David Kahnweiler's Sons, 437 Pearl street, New York send out a calendar with a large picture at the top entitled, "A Close Call." It represents a fishing schooner which has just escaped being run down by a big ocean liner. On the back of the calendar is published information regarding all the life saving and other specialties of this firm.

The Standard Tool Co., Cleveland, Ohio. This calendar is about 6 by 10 inches in size, and is printed in three colors. There is a sheet for each month, and at the bottom of each is a brief reference to some tool manufactured by this company. Printed on the back board are tables of much value regarding machine and hand screw and pipe taps, sizes of twist drills, diameters of reamers, etc.

Thomas P. Benton and Sons, La Crosse, Wis., issues a calendar about 10 by 15 inches in size on a heavy dark gray board. In the center is a fine half-tone engraving, "The Mill Stream at Flood." At the bottom is a calendar with a sheet for each month, and at the upper left-hand corner is a brief reference to the electrical machinery, gas engines and launches which this firm manufactures.

J. Ferguson and Son, Fox Hill Foundry, 1122 Clinton street, Hoboken, N. J. On the main sheet is a striking picture in color of the interior view of the foundry, in which foxes are making castings. At the bottom is a sheet for each month, also one sheet for the entire year. Reference is made to the business of this company, which includes propeller wheels of all sizes and fine gray iron castings.

Kingsford Foundry and Machine Co., Oswego, N. Y. This calendar is handsomely printed, and is about 15 by 16 inches in size, with a sheet for each month, and on each sheet are about twelve different pictures of the various types of boilers manufactured by this company; also a picture of the new boiler plant belonging to this company. In addition to the calendar there are tide tables for Sandy Hook, Governor's Island and Hell Gate.

Charles Este, Twentieth street and Glenwood avenue, Philadelphia, Pa. This is an unusually neat and attractive calendar. The back consists of a very fine sheet of wood, scarcely heavier than ordinary paper, and it is lithographed with a picture of Mr. Este's lumber yard. There is also a brief reference to the various kinds of lumber which he handles. Attached to this wooden sheet are sheets for each month in the year, making the calendar complete for 1902.

ANNOUNCEMENT.

TO THE TRADE:

Two of the best informed and most reliable firms of **Patent Attorneys** in the **United States** make us the **following statement:**

THE "LITTLE GIANT" RECIPROCATING PISTON AIR DRILLS, NOW BEING MANUFACTURED BY THE STANDARD PNEUMATIC TOOL CO., OF CHICAGO, DO NOT INFRINGE IN ANY PARTICULAR ON ANY PATENT FOR ROTARY or OTHER DRILLS.

We hereby guarantee all purchasers and users of **"Little Giant"** Drills against all liabilities.

We will assume the defense of any litigation against our customers which may result from the sale or use of our drill, and respectfully request the trade to pay no attention to **intimidating circulars** which are sent out for the sole purpose of **attempting to injure** our business.

Yours respectfully,

Standard Pneumatic Tool Co.

General Offices and Works
AURORA, ILL.

By E. N. HURLEY, President.

BUSINESS NOTES.

AMERICAN STEAM SPECIALTIES.—The American Steam Gauge and Valve Manufacturing Co., Boston, Mass., reports the volume of business for 1901 largely in excess of that of any previous year, and with an outlook for 1902 much more promising than was last year's business. Notwithstanding that this company moved into a large, new and finely equipped factory two years ago, doubling the manufacturing facilities, large additions to the plant are already contemplated. The demand in this country for this company's gauges and valves has very greatly increased, and foreign business is crowding the company hard. Notwithstanding many other indicators on the market, this company reports a steadily increasing demand for its Thompson indicator. A handsome calendar will be ready for delivery in a few days to all friends of the company who send for one.

RISDON IRON WORKS.—The machinery in the shops of the Risdon Iron and Locomotive Works, San Francisco, Cal., described in the editorial pages this month, is supplied by the following firms: Radial countersinkers by Detrick and Harvey, hydraulic keel plate bender by the Niles-Bement-Pond Co., and the remaining tools in the punch shop by the Hilles and Jones Co. In the machine shop practically all of the heavy tools and many of the smaller engine lathes were supplied by the Niles-Bement-Pond Co. There are also Hendey-Norton lathes, Gisholt lathes, Jones and Lamson turret lathes, Gray planers, Detrick and Harvey open side planers and Pawling and Harnischfeger electric traveling cranes. In the boiler shop there are Newton circular saws, Bement-Niles and Hilles and Jones tools, Pawling and Harnischfeger electric cranes and hydraulic tools and other riveters made by the Risdon Co. The electric equipment was furnished throughout by the Westinghouse Electric and Manufacturing Co. The steel buildings were built by the American Bridge Co. and Jones and Laughlins. The air compressors, hydraulic pumps, accumulators and boilers were manufactured by the Risdon Company's shops. The apparatus furnished by the Westinghouse Company consisted of a large number of type C induction motors for 2-phase current at 7,200 alternations, three 10, seven 5, five 20, three 7 1-2, one 15, one 100, three 50, one 150, two 30 and one 1 horse power motors. Together with these motors the company furnished the necessary transformers, autostarters, controlling switches, etc. The company has also shipped to the Risdon Works a large number of small direct-current generators operating at 125 volts, which it is supposed were to be used for installation on shipboard. It has also furnished the following direct-current motors: Two 30 horse power series, 110 volt multipolar motors; one 10 horse power, 500 volts; one 20 horse power shunt motor, 220 volts; one 2 horse power series motor, 220 volts, and one 7 1-2 horse power motor, 500 volts.

SPECIAL NOTICES.

Announcements under this heading will be inserted at the uniform rate of thirty-three-and-a-third cents a line. Lines average ten words each.

MACHINISTS WANTED.

First-class all-round machinists on Marine work. Call on or address, HOLLAND TORPEDO BOAT COMPANY, New Suffolk, N. Y.

SCHOLARSHIP FOR SALE.

A complete paid up scholarship in the mechanical course of the International Correspondence School is for sale. Price $25. Address SCHOLARSHIP, care Marine Engineering.

SECOND-HAND YACHT WANTED.

A second-hand yacht about 60 feet long, 9 or 10 feet beam, to have about a 25 horse-power engine and fitted with cabin and other accommodations is wanted. Address giving full particulars of yacht with photograph,

YACHTSMAN, care of Marine Engineering.

LUMEN BRONZE.—The well-known bearing metal, lumen bronze, which is an invention of Professor Carpenter, of Cornell University, will hereafter be manufactured by the Lumen Bearing Co., Buffalo, N. Y., this company having succeeded the Bierbaum and Merrick Metal Co.

NEW MARINE REPAIR SHOP.—A new shop has been established by A. Burrows at Clinton and Fifteenth streets, Hoboken, N. J. This plant is thoroughly equipped for all kinds of blacksmithing, especially such as would be called for in marine repairs. The shops are equipped to make light and heavy forgings and attend to other branches of marine work.

THORNTON ELECTRICAL WORKS.—G. C. Thornton has found it necessary, owing to the great enlargement in his business, to incorporate under the name of the Thornton Electrical Works. The company will continue to occupy the office of the former firm at 3 East Fourteenth street, New York, and will continue on a more extensive scale than before the manufacture of electric bells for vessels, yachts and launches, together with dry batteries, miniature lamps and other electrical specialties.

HAWKINS' WORKS
for
Progressive Engineers
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6 VOLUMES IN SET FOR $11.
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Voltmeters, Ammeters, Millivoltmeters, Voltammeters, Milliammeters, Ohmmeters, Portable Galvanometers, Ground Detectors and Circuit Testers.

Our Portable Instruments are recognized as **the standard** the world over. Our **Voltmeters** and **Ammeters** are unsurpassed in point of extreme accuracy and lowest consumption of energy.

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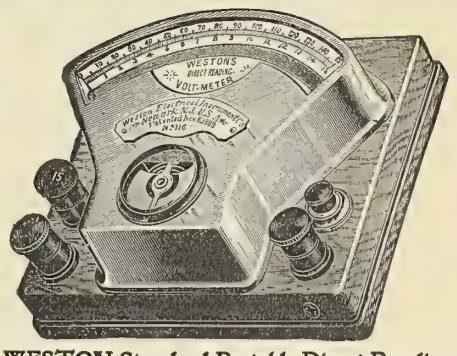
BERLIN:—European Western Electrical Instrument Co., Ritterstrasse 88.
LONDON:—Elliott Bros., 101 St. Martin's Lane.



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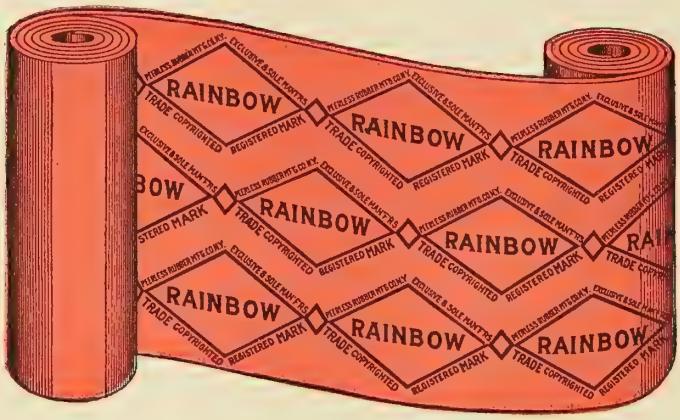

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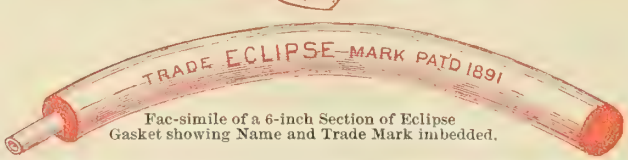

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The Eclipse Gasket is red in color, and composed of the celebrated Rainbow Packing Compound. It will not harden under any degree of heat, or blow out under the highest pressure, and can be taken out and repeatedly replaced. Joints can be made in from three to five minutes.

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Anti-Fouling Compound

FOR

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SEE WHAT ONE OF THE LARGEST STEAMSHIP COMPANIES SAYS ABOUT IT

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Agents wanted in foreign countries.

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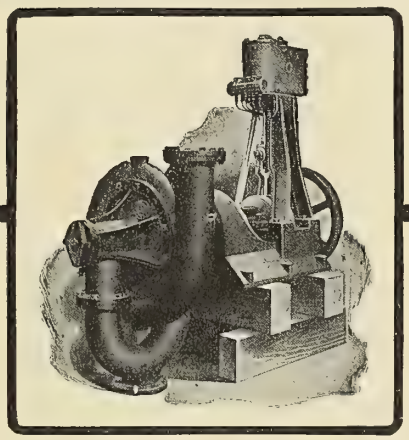
Gentlemen: Chicago, Ills.

"In reply to your valued favor of April 12th, would say that since July, 1900 we have gradually used on 17 different steamers the Anti-fouling Compound for boilers with satisfactory results, and that we intend to introduce this Compound on all of our steamers, for which purpose, as you are aware, we have but recently again ordered 5000 kilograms."

Yours very truly,

Oelrichs & Co



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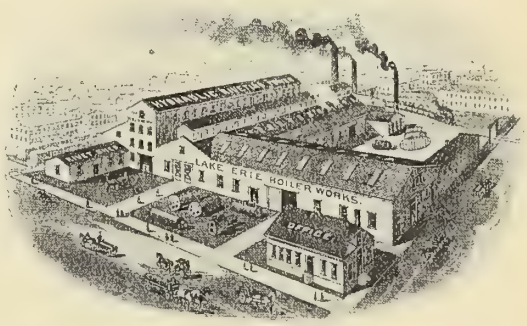

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Original and only manufacturers of the far-famed

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The only Packings and Gaskets which have given, and continue to give, uniform satisfaction throughout. Will resist the highest steam pressure, and the Sheeting and Gaskets can be used over and over again without impairing their efficiency.

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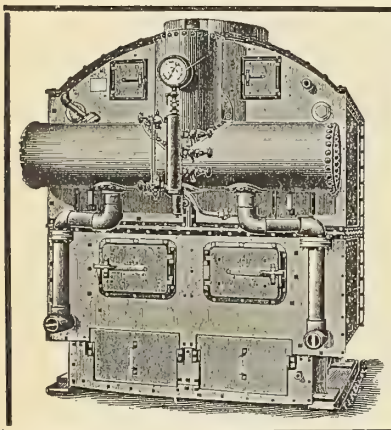

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" 104, J. H. Blumer, Moss Point, Miss.

TRADE PUBLICATIONS.

Standard tables of valves, fittings, and flanges are being distributed by the Best Manufacturing Company, Pittsburg, Pa. These tables are published in booklet form and will be found exceedingly useful by those who have anything to do with steam.

A Pocket Diary and Note Book will be sent to all readers of MARINE ENGINEERING who apply to the David B. Crockett Company, Bridgeport, Conn. This book is of convenient size for the vest pocket and contains in addition to this diary, much information regarding holidays, postage, interest laws, revenue regulations, etc.

Engineers' special tools are described in a booklet under the head of "Engineers' Chums," copies of which can be had upon application to the Mound Tool and Scraper Company, 710 Howard street, St. Louis, Mo. It refers to the sets of scraping tools, cold chisels, packing tools and other specialties which this company manufactures.

Coal Handling Machinery is the title to a catalogue now being distributed by the C. W. Hunt Company, West New Brighton, Staten Island, N. Y. It comprises 32 pages and contains much information of value to our readers. It is well illustrated, having many half-tone engravings and a number of sectional drawings, showing fully the several specialties which this company manufactures.

Marine Hardware of all descriptions, launch fittings, gas engine parts, automobile fittings and special castings of many other knids, as manufactured by the Norwalk Brass Company, Norwalk, Conn., will be found described and illustrated in the 1902 catalogue which is now being distributed, copies of which can be had upon application. The catalogue is about 6 by 9 inches in size, comprises 32 pages and is well printed and illustrated.

Marine Engines and Boilers, steamboat machinery steam yachts, and launches manufactured by Chas. P. Willard and Company, 47 South Canal street, Chicago, Ill., will be found fully described and illustrated in a catalogue now beng distributed. This catalogue contains many pictures of full page size of engines and boilers, together with many pictures of launches. Considerable attention is given to stern wheel boats and especially to their mechanical equipment.

The motors and launches manufactured by the Church Motor and Launch Company, 62 William street, New York, will be found described in an excellent manner in a booklet which is now ready for distribution. This company's engine is fully described and much information given regarding it. There is also a great deal of information regarding the various types of hulls which this company builds. Every reader interested in launches should have a copy.

The Wheeler condensers, feed water heaters, centrifugal pumps, evaporators, combined air and circulating pumps, and other specialties will be found very fully described in a catalogue of 120 pages, a copy of which can be had upon application to the Wheeler Condenser and Engineering Company, 120 Liberty street, New York. The catalogue is 6 by 9 inches in size, fully illustrated, and as it is neatly bound and published it will be found of much value for reference by those of our readers interested in the subject.

The hand book of the American School of Correspondence, Boston, Mass., for 1902, has just been published and is now ready for distribution. It is neatly printed in two colors and gives in much detail a complete story of this school and the many courses. A great deal of information is given regarding each course showing what subjects are covered and the thoroughness with which they are covered, also samples of examination papers and much other information of value to those students who contemplate taking a course of correspondence instruction.

Steam Separators, Oil Extractors, and other specialties manufactured by the Keystone Engine and Machine Company, Fifth and Buttonwood streets, Philadelphia, Pa., have a bulletin of 16 pages devoted to them, which is now being distributed, copies of which can be had on application.

Centrifugal Pumping Machinery is the title to a very complete catalogue, 6 by 9 inches in size, just being distributed by R. D. Wood and Company, Philadelphia, Pa. It contains 100 pages and many illustrations, covering with much thoroughness the entire field of centrifugal pumps.

A compact engine suitable for running launches, pumps, fans, hoists, and other apparatus where light power is wanted, will be found described in a folder being distributed by J. E. Wise, Machinery Department, The Bourse, Philadelphia, Pa., describing the Leonard High Speed Multi-cylinder Engine.

Submarine Torpedo Boats is the title to a handsomely published catalogue being distributed by the Lake Torpedo Boat Company, 11 Broadway, N. Y. It is handsomely printed and contains a number of illustrations of the Lake submarine torpedo boat, showing its design and construction and explaining the manner in which it is intended to work.

Thermometers for Cold Storage, Refrigeration, and Ice Manufacture is the title of a catalogue now being distributed by the Hohmann and Maurer Manufacturing Company, Rochester, N. Y. It is handsomely printed and fully illustrated with thermometers in great variety. Any of our readers at all interested in the subject will find the catalogue of much value.

The heavy lathes manufactured by the Pond Machine Tool Company, 136 Liberty street, New York, have a handsome catalogue devoted to them. It is 9 by 12 inches in size, printed in two colors on heavy coated paper. The illustrations are a full page in size and the printing is of the very best. Any one interested in the subject of engineering tools will find a copy of this catalogue of much value.

The Foster pressure regulator and other high grade specialties will be found fully illustrated and described in a catalogue which is being distributed by the Foster Engineering Company, 107 Monroe street, Newark, N. J. The catalogue is 6 by 9 inches in size and comprises nearly 100 pages. It is neatly bound and is printed on heavy coated paper. A copy ought to be in the hands of every engineer.

The Electric Supplies of the Western Electric Company, New York, have a very complete catalogue devoted to them which has just been published. It is a volume of 5 by 7 inches in size and 2 inches thick. It contains nearly 1,100 pages and there are nearly 3,000 illustrations. It apparently contains everything which one could possibly want to find out about in connection with electrical supplies for ship goods, for lighting and power purposes or any other electrical purpose. Because of the great expense of the catalogue we understand that the charge of one dollar is made for copies of it.

FIRST

In Quality

In Every-thing

UP-TO-DATE

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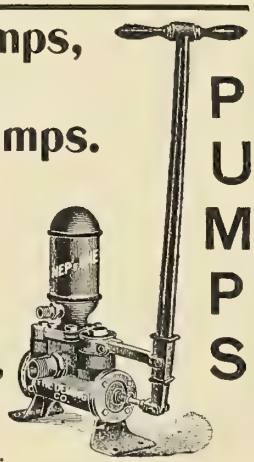
THE L. S. STARRETT COMPANY
Athol, Mass., U. S. A.

Fuel for Boilers is the title of catalogue B now being distributed by the Rockwell Engineering Company, 26 Cortlandt street, New York. It is 8 by 10 inches in size, well illustrated, and as it is devoted to a subject in which there is a great deal of interest it will be found of much value to our readers. The fuel oil burning system of this company is fully shown. Copies can be had by referring to Marine Engineering.

Ship's Deck Pumps,
Bilge Pumps,
Triplex Power Pumps.

We make
HAND AND
POWER PUMPS
for all purposes.
Send for Catalogue.



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For Steam Making Refrigerating Apparatus

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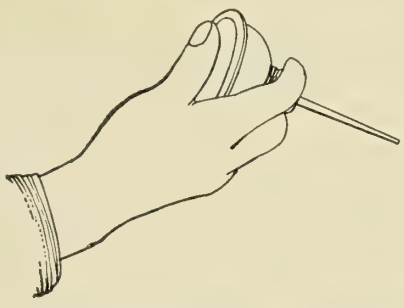

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You can use is

DIXON'S

Pure Flake

GRAPHITE

in an ordinary

SQUIRT CAN.

For valves and cylinders and all bearings there is nothing to equal Dixon's graphite. Sample free.

JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J.

The exhaust heads manufactured by the B. F. Sturtevant Company, Jamaica Plain, Mass., are attractively and concisely described in a private mailing card issued by the company, copies of which can be had on application.

Theo. Audel and Co., 63 Fifth avenue, New York, are sending out to all inquirers a booklet giving a great deal of information regarding the Hawkins educational works for engineers, firemen, electricians, machinists and others.

Students who seek engineering instruction by correspondence will find much to interest them in a catalogue issued by the International Correspondence Schools, Washington, D. C. The book is very complete, being about 50 pages in size.

Calendars Received.

James L. Robertson and Son, 108 Fulton street, New York, are distributing a calendar, 7 by 13 inches in size, with a sheet for each month, at the top is a picture of a girl in bathing costume.

The Fort Wayne Electric Works, Fort Wayne, Ind., send out a calendar each month neatly engraved, being one of the popular designs modeled in clay. On each issue is a picture of some one type of machine manufactured by this company.

The Falls Hollow Staybolt Company, Cuyahoga Falls, Ohio, sends us a calendar, 10 by 16 inches in size, containing a large lithograph, in colors, of a famous painting representing three men shaking dice, raffling for a bird. At the bottom of the card is a calendar with a different sheet for each month.

The American Steam Gauge and Valve Manufacturing Company, Boston, Mass., is sending out a handsome calendar, at the top of which is a fine engraving, having at the left a picture of a battleship and at the right a picture of a modern compound locomotive. There are also pictures of gauges, indicators, etc. The calendar is about 12 by 18 inches in size.

The Whiting Foundry Equipment Company, Harvey, Ill., is distributing a calendar nearly a yard square. At the bottom is a sheet for each month and in the center is a large map of the world in color. Surrounding it are pictures of overhead jib and other cranes which this company manufactures; also different specialties in the line of foundry equipment.

Alfred B. Sands and Son, 134 Beekman street, New York, send a calendar, 8 by 10 inches in size, with a sheet for each month and a very attractive picture of the yacht *Defender*. The Messrs. Sands also send us another calendar with a picture at the top representing a bark rounding Cape Horn in a gale. This calendar contains tide tables for both Boston and New York.

The J. S. Hoskin's Lumber Company, Marine Bank building, Baltimore, Md., sends a calendar with a handsome color lithograph at the top, entitled "Solid Comfort," representing an old musician who has laid his 'cello one side to enjoy a comfortable smoke. Below reference is made to the ship spars, ship timber, tree nails, decking, knees and other specialties which this company handles.

BUSINESS NOTES.

POST DRILLS—The Cleveland Punch and Shear Works Co., Cleveland, Ohio, finds a steady demand for its lever and screw fitted post drills. The lever feeding machine that is specially adapted for drilling and countersinking holes in large plates, beams, etc., is found to be of great use in shipbuilding. A screw feed machine is specially adapted for cutting flue holes in boiler plate and other heavy drilling, and is an excellent tool in boiler and machine shops.

Walworth Mfg. Co., 130-136 Federal St. BOSTON

Specialty of **BRASS VALVES** and Fittings for Marine Construction

Extra Heavy Valves, Bent Pipe and Fittings for High Pressure Work

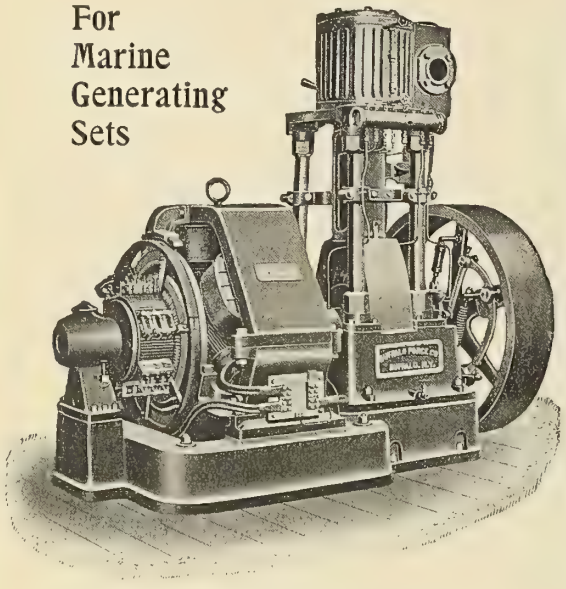
Sole Manufacturers of **Van Stone Pipe Joint**

Which does not Weep under heavy pressure

Send for Catalogue N. Y. Office: Park Row Building Prices and Terms on Application

Buffalo Marine Engines

For Marine Generating Sets



Buffalo Forge Company,

BUFFALO, N. Y.

NEW YORK OFFICE, 39 Cortlandt Street

The Conditions

requisite for the most beautiful and most durable painting are a dry surface, dry weather, pure oil, a preponderance of

ZincWhite

and plenty of time for drying between coats.

Read our practical pamphlets:

"Paints in Architecture,"
"The Paint Question."

Free to any address.

THE NEW JERSEY ZINC CO.
11 BROADWAY, NEW YORK

Sprague Orders.—The Sprague Electric Company, 527 West Thirty-fourth street, New York, has closed an order with the Atlas Portland Cement Company for three 400 kilowatt engine type split pole generators at speed of 156 revolutions per minute, for its plant in Hannibal, Mo.; another order is from the De Laval Steam Turbine Company, for ten 20 kilowatt and ten 75 kilowatt turbine generators. The Pennsylvania Steel Company has ordered for its new bridge shop at Steelton, Pa., fifteen wall crane trolley hoists, the electric hoisting equipment of which is built by the Sprague Company.

Marine Supplies.—The Eagle Oil and Supply Company, 104 Broad street, Boston, Mass., wishes to thank the many captains and engineers for the past favors during the yachting season, and to state that the business of this company for the last year has been the largest and most successful in the history of the house. The coming season will find this company better equipped than ever to handle the demands of the marine buyers, and prompt delivery is promised in all cases. Engineers and captains are invited to call and look over probably the large stock before purchasing (all under one roof) in Boston which caters to the requirements of the marine purchaser in deck and engine room supplies.

Interesting Boiler Test.—The Stirling Company, Pullman building, Chicago, Ill., has just received from its correspondents, in France, information regarding a series of boiler trials conducted under the direction of the Boiler Committee of the British Admiralty in three sloops of exactly the same construction, tonnage, etc., and similar in all respects except that each has water tube boilers of a different type. The results with the *Fantome* which had Niclausse boilers, on a trial of thirty hours at 300 horse-power, was a consumption per horse-power per hour of 1.71 pounds. At 1,000 horse-power 1.54 and at full horse-power of 1,400 a consumption of 1.54. The French Government has just placed an order for Niclausse boilers for cruiser *Jean Bart*.

Boiler Staybolts.—We are informed by the Falls Hollow Staybolt Company, Cuyahoga Falls, O., that its business has been steadily increasing during several years past and that it receives no complaints of any description regarding its products. This company guarantees every bar of staybolt material, whether iron or steel, to meet the Government specifications and inspection.

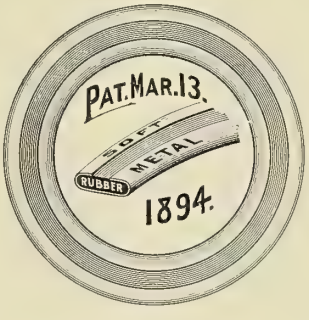
Baltimore Dry Dock Company.—The Baltimore Dry Dock Company, Baltimore, Md., recently succeeded to the business and plant formerly managed by the Columbian Iron Works and Dry Dock Company. The new Company has started out with ample capital and has added a large amount of new machinery bringing the plant up-to-date in its equipment. A part of the plant consists of a 470 foot dry dock, so that the new company is in position to build new vessels or to repair those already built, at prices and on time limits equal to other companies. Because of the great extension of the company's business, the name has recently been changed, so that the company is now known as the Baltimore Shipbuilding and Dry Dock Company.

Condensing Apparatus.—The contract for the condensing apparatus for the Rapid Transit power station, New York, has been awarded to the Alberger Condenser Company, 95 Liberty street, New York. This is believed to be the largest contract ever given for a condensing apparatus, the total capacity of the outfit being 80,000 horse-power, comprised of eight units of 10,000 horse-power each. The type selected by the engineers of the Rapid Transit Subway Construction Company is the Barometric Condenser recently brought out by the Alberger Company. This is a jet Condenser and operates on the dry vacuum system. The water, circulating and air pumps are to be operated by cross compound steam cylinders with cranks and flywheels. The whole equipment is new and original in design and is expected to give unusual results, both in economy and from an operative point of view.

Fusible Plugs.—At this time general interest is being taken in the subject of fusible boiler plugs, owing to several recent boiler explosions both on land and at sea. Many fusible plugs on the market have been found that the metal of which they are made, or owing to the form of the plug, will not fuse at the temperature stated. The Van Wagenen Ship Chandlery Co., 233 West street, New York, made an affidavit that on and after November 21, 1901, all fusible plugs made by this firm will be filled with good Banca tin, stamped with the sole licensee's name, George Van Wagenen, and that the plugs will be made in strict accordance with sections 26, Rule 11, Rules and Regulations of the Board of Supervising Inspectors, and also in compliance with Department Circular No. 98, dated at Washington, D. C., November 8, 1901. This company manufactures the Bailey patent fusible plug for marine boilers, which are recommended by the United States Board of Supervisors of Steam Vessels, by Prof. R. H. Thurston and other practical authorities.

THE
McKim Gasket

Cannot Blow Out.



Can be re-applied indefinitely.

Made of packing encased in soft rolled metal, combining the elasticity of one with the strength of the other. All sizes of manhole and hand-hole plates and pipe fittings.

McCORD & CO.
104 Broadway - - - - New York
1471 Old Colony Building - - Chicago

Anchors for the Emperor's Yacht.—It is announced that order has been placed with the Cape Ann Anchor Works, Gloucester, Mass., for one anchor weighing 900 pounds and another weighing 1,000 pounds for the yacht *Meteor* which the Townsend and Downey Shipbuilding Company, New York, is building for the German Emperor. Each anchor is to be filed all over to be made smooth and then is to be galvanized.

Palmer Launches.—Palmer Bros., Cos Cob, Conn., have been awarded contracts for two boats for the Cheesebrough Bros., of Brooklyn, N. Y., for pleasure purposes. The contract calls for one 35 foot speed launch 6 feet 6 inches beam, to be equipped with a 12 horse-power motor of the 4-cycle type; the other launch is to be 38 feet long, 8 feet beam, and is to be a cabin cruising launch, finished in mahogany and to have all the latest comforts and conveniences.

Little Giant Pneumatic Tools.—Owing to the increase in its Canadian business, the Standard Pneumatic Tool Company, Aurora, Ill., has appointed J. B. Wilson manager of new Canadian offices which have just been opened at 103 Union Station Arcade, Toronto, Ontario. The company will carry at this office a full line of Little Giant pneumatic tools and appliances, repair parts and accessories. The office will be made an important one so that hereafter all orders for Canadian customers can be supplied promptly from Toronto.

Havana Dry Dock.—The Havana Dry Dock Co. demonstrated its ability to handle large ships with dispatch by recently docking the P. & O. steamer, *Miami*. This vessel was thoroughly scraped and painted and some intricate repairs made to her machinery, and the day on which she was discharged another steamer took her place on the dock. This floating dock has been but recently completed, and is now open for general operation. A table of prices for docking vessels of various sizes may be obtained by addressing this company, either at their New York address, 32-34 Broadway, or at Havana, Cuba.

Free Sample of Packing.—The Boston Belting Company, 256 Devonshire street, Boston, Mass., is meeting with great success in one of its latest products, Forsyth Combination Packing. This packing is made of rubber with one or more plies of flexible sheet metal insertion. It is claimed to retain its life and elasticity and to be more durable than cloth insertion packing. There is a strong adhesion between the metal and the rubber. The packing is very flexible and is not so liable to blow out as ordinary packing. An important claim for this product is that it will satisfactorily withstand the heat of high pressure steam and that it is practically a metal packing with elastic surfaces. Samples of the packing will be sent to readers of Marine Engineering who write for them. The packing is made in sheets 36 inches wide and not exceeding ten yards in length. It is made in different thicknesses from a sixteenth of an inch up.

MODERN WIRING

Our Flexible Steel Armored Conductors are endorsed by engineers for use in Marine or Ship Wiring, because of the high grade insulation, thorough protection from mechanical and other injuries, entire flexibility and low cost.

Send for descriptive bulletin No. 40115. Send for catalogue 40,415.

SPRAGUE ELECTRIC COMPANY

General Offices: 527-531 West 34th Street, New York.

BRANCH OFFICES: CHICAGO: Fisher Bldg. ST. LOUIS: Security Bldg. BOSTON: 275 Devonshire Street. BALTIMORE: Maryland Trust Bldg.

A School in Naval Architecture.—Arrangements have been made by the New York Nautical College, 130 Water street, New York, to start a department of naval architecture which will be under the charge of George Crouse Cook.

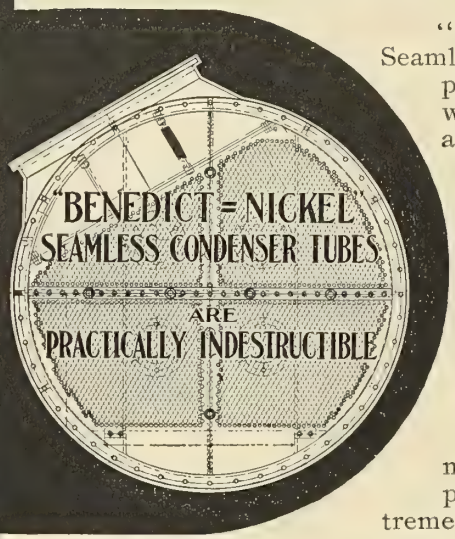
To Repack the Hohenzollern's Engines.—We are informed by the United States Metallic Packing Company, Thirteenth and Noble streets, Philadelphia, Pa., that the engines of the Emperor of Germany's yacht, *Hohenzollern*, are to be re-equipped with United States metallic packings.

Asbestolith.—Asbestolith is the name of a material which is finding very general use for fire-proof floors, sanitary work, etc. It has been used quite a little by the United States Government, much of the flooring in the rebuilt *Cincinnati* being of this material. It is being put on the market by the Asbestolith Company, 95 Nassau street, New York, which will send samples and give full information by referring to Marine Engineering.

Photography.—A. J. Drummond, 50 Fulton street, New York, makes a specialty of photographing for industrial and other purposes. He does a large business in making photographs for Court exhibits and has special facilities for making photographs of the largest size as well as for making pictures of machinery, interior views, maps, drawings, etc.

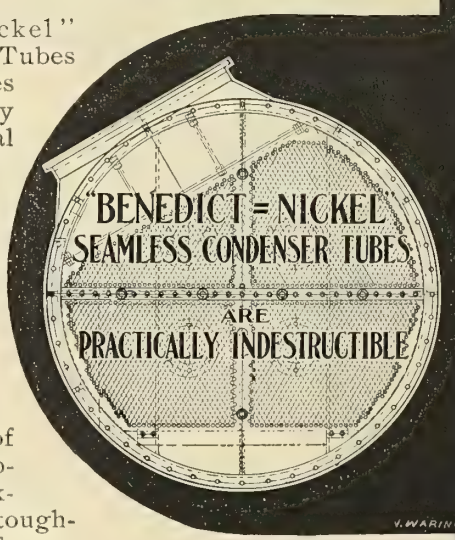
Vessels Classified.—The American Bureau of Shipping, 66-68 Beaver street, New York, has classed and rated recently, in the "Record of American and Foreign Shipping," the following vessels: American Screw *Brandon*, American Screw *El Alba*, American Sch. *Prescott Palmer*, American Sch. *James Pierce*, American Sch. *Adelaide Barbour*. American Sch. *Kenwood*, American Sch. *Gage H. Phillips*, American Bark *Adam W. Spies*, American Bark *Virginia*, American Trn. *J. S. Hoskins*, American 3 mast Sch. *Viola Reppard*, American Bark *Willard Mudgett*, British 3 mast Sch. *Nellie Louise* and British 3 mast Sch. *W. N. Zwicker*.

"BENEDICT=NICKEL" is peculiarly adapted for Condenser Tubes



"Benedict-Nickel" Seamless Condenser Tubes possess qualities which strongly appeal to naval authorities, large shipbuilders and consulting and designing engineers.

The inert nature of the metal (an alloy of nickel and copper) and the extreme strength and toughness of the tubes, form a combination which positively resists Electrolysis.



The life of "Benedict-Nickel" Seamless Condenser Tubes being almost indefinitely long, they are far more economical in the long run than copper or brass—these having frequently to be renewed.

"Benedict-Nickel" Seamless Condenser Tubes are spirally formed like a twist gun barrel. They are hot rolled from a solid billet,—not cast on a core.

They can be used 25 per cent. lighter than copper or brass tubes and have therefore a much greater condensing efficiency.

We can supply copper and brass seamless tubing made by the same process as "Benedict-Nickel" seamless tubes, where it is desired, as we are among the largest manufacturers of the same; but we recommend "Benedict-Nickel" on account of its longer life.

We sell **Tobin Bronze** at manufacturers' prices. This has an almost world-wide reputation for marine purposes.

Send for treatise on "Electrolysis of Condenser Tubes."

BENEDICT & BURNHAM MFG. CO.,

Mills and Main Offices, Waterbury, Conn.

New York, 253 Broadway. **Boston, 172 High Street.**

V.WARING N.Y.

Remington Gas Motors.—The Remington Automobile and Motor Company, Utica, N. Y., has secured the services of H. B. Maxwell, the well-known gas engine expert, to take entire charge of its experimental and motor construction department.

Marine Upholstery.—M. W. Fogg is now fully settled in the large and completely equipped new building at 202 Front street, New York, and is in shape to fill promptly orders of any size for anything in the line of cushions, mattresses and marine upholstery.

A Busy Launch Builder.—The Davis Dry Dock Company, Kingston, Canada, has on hand orders for many launches which are to be ready for the coming season. Among them a 40-foot gasoline launch, for use in the Thousand Islands; a 34-foot launch, for use in the same waters; a 38-foot steam launch with compound engine and water tube boiler, for use in Canadian waters; a 30-foot gasoline launch, for use in local waters, together with two 40-foot steam launches and one 40-footer with triple expansion engines.

Yacht and Launch Repairing.—The Newport Engineering Works, Newport, R. I., has just built a shop 70 by 30 feet in size, two stories high, on lower Thames street. The business of this company will be the building of steam and gas engines and all sorts of repair work for launches and yachts. The shops are believed to be as finely equipped for this purpose as any other shop along the New England coast. A. Livingston Mason is at the head of the new company, and the engineering part of the work is in charge of Earl P. Mason, a recent graduate of the Massachusetts Institute of Technology. This concern has been connected with yacht and steamboat work for many years. A novel feature of the establishment is a reception room for deck and engineer officers of yachts and vessels of all kinds. This room will have on file leading publications of all kinds and the establishment is on the water's edge convenient to the anchorage grounds. This place can be used as headquarters by officers and for mailing and receiving letters.

ENGINEERING DATA.

There has been such a demand for engineering data in compact form that we have established a bureau for this purpose.

The plan is to supply 20 cards a month. These cards are to give information regarding new vessels, such as has appeared in the columns of Marine Engineering and in other publications; also data regarding ship riveting, labor costs per ton dead weight in England and on our Great Lakes; data regarding boilers of different types; dimension weights and horse power per ton of various types of vessels; fuel economy on large ships per one hundred-ton miles; prices of battleships for the United States Navy per knot ton and per horse-power ton; similar data regarding cruisers and other naval vessels, design dimensions of engines, new formulæ; in fact, all current data useful to the practical designer and engineer, etc.

These cards will be of the standard library size, suitable for filing with personal data, in the standard library index boxes.

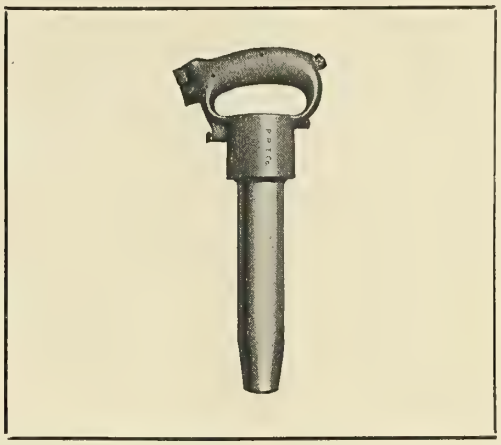
This service will include 20 cards a month, or 240 cards a year. The price is as follows:—

One year	$4.00
Six months	3.00
Three months	2.00

In many instances special data can be furnished, when desired, at a slight advance in cost.

Fuller information regarding this service can be had upon application to

MARINE ENGINEERING,
309 Broadway, New York City.



Three Points

Our pneumatic tools work fast. So do some others.
Ours keep on working. The valve parts don't wear out. Others do.
Our tools are strong. You can give them to Pat, Pedro or Black Jim without fear. With other tools — be careful.
Best two in three wins.

Send for Catalogue of our Pneumatic Chipping and Riveting Hammers, Rotary Drills, Rammers, etc.

Philadelphia Pneumatic Tool Co.
1038 Ridge Avenue, Philadelphia.

NEW YORK. PITTSBURG.
CHICAGO. SAN FRANCISCO.

Foreign Agents:
Chas. Churchill & Co., London and Glasgow.
C. G. Eckstein, Berlin and Vienna.
Henry Hamelle, Paris.
V. Löwener, Copenhagen and Stockholm.

HF

Export Trade.—Browne and Frothingham Co. opened offices at 32 Broadway, New York, as a special department for the export of marine tools. This branch of this firm's business will be under the supervision of A. M. Fisher, who has just returned to this country after having spent three years in Japan.

Marine Boiler Building.—The new boiler shop recently erected by the Kingsford Foundry and Machine Works, Oswego, N. Y., is already crowded with work. The company opens the new year with orders for sixteen large marine boilers on its books, together with many orders for centrifugal pumping machinery and for various engines.

Hewson Steam Turbines.—We are informed that a Hewson multiple expansion steam turbine is being built at the plant of the Cramp Ship and Engine Building Co., Philadelphia, by the Hewson Steam Turbine Co., which has offices in the machinery department of the Bourse, Philadelphia. Circulars and information regarding this turbine can be had from the Bourse office.

Central Sales Offices.—On and after January 15, 1902, the general sales office of the Pennsylvania Steel Co. and Maryland Steel Co. will be located in Philadelphia, and all communications regarding sales, shipments, etc., should be addressed to H. F. Martin, general manager of sales, the Pennsylvania Steel Co., Girard Building, Philadelphia, Pa. A local sales office will be retained at the plant of the Pennsylvania Steel Co. at Steelton, Pa., and all business originating in the adjacent territory will be handled by Chas. W. Reinoehl, sales agent.

"A Motor that Motes."—The Bridgeport Machine and Motor Works, Bridgeport, Conn., prides itself on building a gas engine which the company claims is a "motor that motes." A great deal of information is given regarding this motor in a catalogue which is being distributed. The engines vary in size from about 2 horse-power to 12 horse-power. Among the special points of superiority claimed for the engines are simplicity, compactness, ease of starting, freedom from vibration, quiet running, no vapor under pressure, no explosive mixture stored in tank, no lamp to blow out, no stuffing-boxes to pack, and minimum cost.

Portable Riveting Machines.—John F. Allen, 370 Gerard avenue, New York, who manufactures portable pneumatic machines and other tools, has just received an order from the American Car and Foundry Co. for fifteen riveting machines to be used in the making of oil-tank cars. Mr. Allen has also just received an order for ten machines from the Western Railway Equipment Co., of St. Louis, which are to be used for the same kind of work. These orders were secured after other machines had been tried, the aim of the purchasers being to secure absolute tightness of the rivets. These riveting machines are already used in many shipbuilding and marine boiler shops, their long reach enabling them to cover the large plates now used.

Paint for Metal Surfaces.—The Specialty Paint Co., 1139 Park Row Building, New York, calls special attention to its "No. 4" paint for metal surfaces. The claims are made for this paint that it will stick; that it will stop rust; that it makes a most excellent foundation for other paint: that it will adhere to and protect raw metal and any other surface, and that it is not necessary to have the metal surfaces start to rust in order to make the paint stick; that the paint is not affected by heat, cold or weather; that it will save iron structures from those disfiguring and deteriorating rust streaks seen on most old structures, and many new ones; that it will stay on and protect metal after numerous coats of paint have been burned off. This paint is designed for a first or permanent coat, and should be painted over for best results. It is claimed to cost one-third less in price than other paints manufactured for use on metal surfaces. This paint has been on the market for twenty-five years. Full information regarding it can be had from the manufacturer.

New Launch Plant.—Mr. O. Sheldon, who for many years has had a large launch and yacht building establishment in South Boston, has moved to Neponset, Mass., where he has fitted up a large and complete shop which has all the latest improvements and appliances for the building of yachts and launches and for storing them in winter. Mr. Sheldon always carries in stock a line of launches of various sizes.

Dixon's Silica-Graphite Paint.—One of the most severe tests that paint has ever been put to is that of Dixon's silica-graphite paint, manufactured by the Joseph Dixon Crucible Co., Jersey City, N. J., which was used on the Union Railroad bridge at Rankin, Pa. This bridge is 2,328 feet long, and is designed for carrying molten metal from one furnace to another. The bridge is subjected to great heat, also to sulphur fumes from locomotives and river boats, as well as from adjoining furnaces. In painting the bridge, Dixon's silica-graphite paint has been selected.

Copper and Bronze Products.—The Taunton-New Bedford Copper Co., of New Bedford, Mass., is sending out a circular letter in which it calls attention to the superior products of its mills, which are especially devoted to the manufacture of articles of copper and its alloys necessary in ship and engine building and other kinds of marine work; yellow (muntz) metal sheathing dimension sheets, bolts and bars, sheathing, slating and boat nails, condenser and supporting plates, piston and pump rods; also the justly celebrated Parsons' manganese bronze in all the above forms, which is the finest article available for high-class marine work; the uniformity, finish and good wearing qualities of Taunton yellow metal scheathing is renowned. The company also manufactures pure copper sheets, bolts, bars, rods, nails, tacks, wire, etc., in great variety.

Pneumatic Tools.—Owing to the great rapidity with which its business has grown, the Philadelphia Pneumatic Tool Co., Philadelphia, Pa., has found it necessary to have much larger quarters and greatly increased manufacturing facilities. The contract has just been made for a large factory on Twenty-first street, below Allegheny avenue, in Philadelphia, alongside the tracks of the Reading Railroad. The building will be one-story, with basement, 96 by 130 feet, with side extension for boiler-house, 24 by 44 feet. The engine room will be located in the basement, where will be installed an 80 horse power engine, together with direct connected generating unit for lighting, etc. The roof will have four large lanterns or skylights, allowing plenty of light over the entire floor area. The main floor will be free from partitions, except in one corner, where the offices will be located. It is expected that the building will be ready for occupancy not later than May 1st, and a considerable number of machine tools are being installed.

Modern Marine Shops.—The Marine Iron Works, Chicago, are entitled to praise for their energetic action in erecting new and modern buildings to replace those that were destroyed in the recent severe fire. The new buildings and equipment are greatly superior to the old, and include the highest grade of modern machinery, resulting in its being one of the most efficient plants of its kind for building high-grade marine engines, boilers, launches, tugboats and dredges. The disastrous fire of September 24th last completely destroyed every building of the old plant, and, among other valuable matter, a large amount of correspondence, many of the unanswered letters being held awaiting the completion of drawings and special details. This is a loss that cannot be replaced, for not only the original letters but also the addresses and records pertaining to them were completely destroyed. It is hoped, however, that the majority of the lost inquiries will be duplicated. The loss of catalogues, circular matter, engravings, photographs, etc., is now most keenly felt, and it will require considerable time and attention to replace them.

S. S. Zulia.—S. S. *Zulia*, of which we published plans and description in our issue of January, 1902, is almost an exact duplicate of the S. S. *Maracaibo* owned by the same people. John Haug, 206 Walnut Place, Philadelphia, Pa., informs us that the *Maracaibo* was built from plans and specifications prepared for him and that both vessels were built under his supervision.

Magnolia Metal.—The Magnolia Metal Co., whose New York office and factory was recently destroyed by a falling wall, has purchased an office building and factory at 115 Bank street, New York, which it is equipping with the most modern appliances for conducting its business and which it will have ready for occupancy early in February. At present the company is supplying the eastern trade from its factory at Stirling, N. J. It also has factories in Chicago, Montreal, Canada, and, with the addition of its New York factory, will be well prepared to meet all demands promptly.

Nolek Packing.—Webb's Nolek stuffing-box packing, which is extensively used in shipyards as well as on board many vessels, is claimed by the manufacturers to be the equal of anything in the line of packing. It is easily applied and has a most excellent reputation for wearing qualities. It has been extensively used on many vessels, not only for main propelling engines, but for pumps, circulating pump engines, donkey engines and other uses. This packing is manufactured by Edward G. Webb and Company, 312 North Third street, Philadelphia, Pa. One of the strong points claimed for it is that it will not burn, as the fiber used is magnesiaized cotton. The packing is also made water tight.

Chicago Pneumatic Tool Co.—The executive board of the Chicago Pneumatic Tool Co. announce the following appointments: W. O. Duntley, vice-president and general manager; C. E. Walker, assistant general manager; Thomas Aldcorn, general sales agent; W. P. Pressinger, general manager Air Compressor department; Chas. Booth, manager Chicago office; S. G. Allen, manager New York office. The organization of the Chicago Pneumatic Tool Co., of New Jersey, has been completed, and on December 31, 1901, took over the following properties, namely: The business and plant of the Chicago Pneumatic Tool Co., of Illinois; the Boyer Machine Co., of Detroit; the Chisholm and Moore Crane Co., of Cleveland; the Franklin Air Compressor Co., of Franklin, Pa., and the New Taite-Howard Pneumatic Tool Co., Ltd., of London, England. The securities are $2,000,000 five per cent, twenty year gold bonds and $5,000,000 of common stock, which is the only kind issued. The company starts with a working capital of more than $1,000,000, of which more than 50 per cent is in actual cash. The earnings of the constituent companies for the last year were $700,000.

SPECIAL NOTICES.

Announcements under this heading will be inserted at the uniform rate of thirty-three-ana-a-third cents a line. Lines average ten words each.

PERMANENT POSITION WANTED.

Permanent position is desired by a graduate engineer of several years' experience in naval and mercantile ship design construction, who has designed and superintended the construction of several steamships.

DESIGNER, care Marine Engineering.

ATTENTION SHIPBUILDERS.

Shipyard Superintendant wants to make a change, knows how to get the most out of a small plant and to develop same, and to manage a large one to the best advantage. Young man, member Am. Society Naval Architects, American stock, with no old fogy ideas. Claims to know shipbuilding thoroughly in its most modern phases, from designing to the finish, ready for sea. Good reasons for making change given proper enquirers. Confidential correspondence solicited. If the above is one of your needs, it is up to you, as I can substantiate every claim. Of course money is an object. Address,

H-U-S-T-L-E, care Marine Engineering.

The Yale Submarine Lamp.—The Yale submarine lamp has been adopted by the Italian Government after tests recently made at the Royal Naval Arsenal at Spezia. The departments having charge of the experiments with the new submarine boat, just completed for the Italian Government, have placed orders for a complete equipment of Yale submarine lamps with the Naval Electric Company, 95 Liberty street, New York. This submarine boat of the Italians has created quite a stir in Europe owing to the fact that Italy has produced so many prominent inventors. The design of this submarine boat has been kept a secret, but the general principles of construction have leaked out. It embodies some of the features of the Holland and the Lake submarine boats and possesses a similar contrivance to the diving door of the *Argonaut*. It is in connection with this diving door that the Yale lamp is to be used. The boat steals into a hostile harbor, sends out a diver with a powerful electric lamp so shaded as not to be visible at the surface, and cuts the electric cables leading to the submarine mine defenses.

For Advancement in Practical Engineering

STUDY HAWKINS' AIDS

Standard & Up-to-date

$11. for a Set
$1. per Month

Catalog free for the asking.

Theo. Audel & Co
PUBLISHERS,
63 Fifth Ave.
New York.

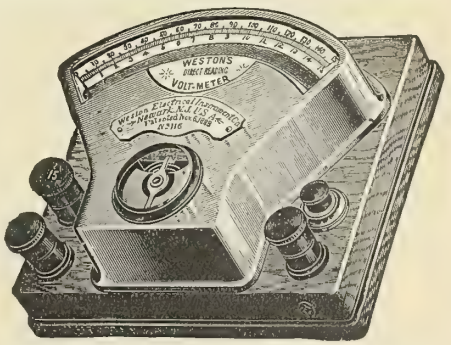
WESTON STANDARD PORTABLE DIRECT-READING

Voltmeters, Ammeters, Millivoltmeters, Voltammeters, Milliammeters, Ohmmeters, Portable Galvanometers, Ground Detectors and Circuit Testers.

Our Portable Instruments are recognized as **the standard** the world over. Our **Voltmeters** and **Ammeters** are unsurpassed in point of extreme accuracy and lowest consumption of energy.

WESTON ELECTRICAL INSTRUMENT CO.,
Waverly Park, Essex County, N. J., U. S. A.

BERLIN:—European Western Electrical Instrument Co., Ritterstrasse 88.
LONDON:—Elliott Bros., 101 St. Martin's Lane.



WESTON Standard Portable Direct Reading Voltmeter.

The Peerless Spiral Piston and Valve Rod Packing

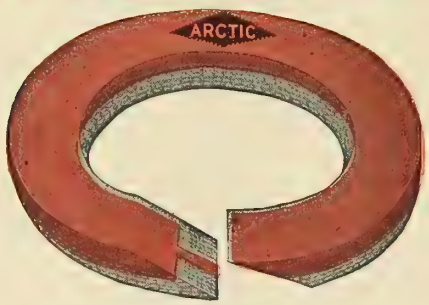
It will hold 400 lbs. of steam

Once tried always used

Will run twelve months in high speed engines

Arctic Packing

To be used exclusively for packing Ammonia Pumps



This packing is made in several hundred sizes

This packing is specially constructed for ice machine service, of layers of rubber and plies of duck which are so arranged and laid as to best resist the actions of ammonia, cold and heat.

The duck is a specially made duck, frictioned with an entirely new compound heretofore unknown to the rubber trade, and the core and back is of the celebrated Rainbow Packing compound, which is specially adapted to resist ammonia, cold and heat.

This packing is constructed on a strictly scientific basis, and the results obtained thus far have demonstrated fully its value for ammonia packing.

This packing is made in several hundred sizes. The rings may be slipped onto the rod very readily.

The usual rule is to be observed in giving measurements, the depth and width of stuffing box and size of piston rod, in order to get the size desired.

Sole Manufacturers of the

Celebrated Rainbow, Eclipse Sectional Rainbow Gasket, Hercules Combination and Honest John Packings.

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These Goods Can be Obtained at All First-Class Dealers.

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" 92, H. E. McArthur, Courier-Herald Bldg., 3d floor, Saginaw, W. S., Mich.
" 93, M. E. Davis, M. T. & S. Co., 929 D St., N. W., Washington, D. C.
" 94, George R. Jones, Box 222, Washington, N. C.
" 95, A. P. Jerguson, Box 198, Key West, Fla.
" 100, Jas. P. Lynch, Honolulu, H. I.
" 101, Thos. J. Hanlon, Box 765, Norfolk, Va.
" 102, Fred W. Linsemeyer, 210 Clinton St., So. Haven, Mich.
" 103, C. H. Hall, Box 512, New Berne, N. C.
" 104, J. H. Blumer, Moss Point, Miss.

TRADE PUBLICATIONS.

The type of gas engines manufactured by the C. H. Blomstrom Motor Company, Detroit, Mich., is well shown on a circular which is being distributed.

Steam plant thermometers and gauges have a special catalogue devoted to them by the Hohmann and Maurer Manufacturing Company, Rochester, N. Y. The catalogue is very neatly printed and contains many excellent illustrations of thermometers and gauges of different kinds, together with much valuable information regarding the general subject.

The Truscott Boat Manufacturing Company, St. Joseph, Mich., is distributing a neat booklet which tells "why a Truscott boat is the best"—to quote from the cover—also the special features of the gas engine which this company manufactures. The catalogue is very fully illustrated and well worth a perusal by anyone interested in gas engines and launches.

Direct Connected Units is the title to Bulletin No. 100 now being distributed by the Racine Hardware Company, Racine, Wis. It contains 16 pages and is very handsomely printed in two colors. There are many combinations of the Racine automatic engine with dynamos of different types and shapes. On the back page is a picture of the Racine twin marine engine. Copies can be had by referring to Marine Engineering.

Users of paint will read with interest a booklet being distributed by the Goheen Manufacturing Company, Canton, Ohio, entitled, "The Story of Human Progress." It contains many pictures of modern steel buildings in which the steel work has been protected with the carbonizing coating which this company manufactures. A number of letters are given from various lines of engineering work, speaking in the highest terms of the lasting qualities of this coating. The pictures are particularly interesting.

The pumps and other hydraulic machinery manufactured by the Deming Company, Salem, Ohio, will be found fully illustrated and described in a large catalogue known as Number 21, copies of which can be had by referring to Marine Engineering. This catalogue, comprises 294 pages and is neatly bound in flexible cloth. There is almost no limit to the variety of pumps which are here referred to. There are illustrations in great variety, so that each pump is fully explained both by picture and by concise description accompanying it. The innumerable tables throughout the book give a great deal of information regarding capacities, stroke, discharge, suction, etc. The variety of pumps shown includes almost everything used for marine purposes, from small hand deck pumps to bilge pumps, oil pumps, fire pumps, wrecking pumps, etc.

A catalogue of marine specialties will be sent to every reader of Marine Engineering who refers to this magazine, describing a very complete line of marine specialties, by the American Ship Windlass Company, Providence, R. I. The catalogue comprises 260 pages, and is devoted primarily to the complete list of windlasses and capstans which this company manufactures. Both of these devices are shown in great variety and a great deal of information is given regarding them, together with almost numberless illustrations Among the other specialties are various steam attachments for windlasses, patent iron bitts, Winter's automatic lubricator for worm gears, barring engines, yacht engines of various types and sizes, yacht mast winches. centerboard winches, improved stockless anchors, steam gypseys, tables of many kinds regarding anchors and chains, steam piping for windlasses and towing machines, etc., winches for hand cargoes, schooners and barges, and for various other purposes, hoisting engines, wharf drops, chain indicators, together with a great deal of information regarding the towing machines which this company manufactures.

The several types of engines, feed pumps and heaters, condensing apparatus, marine boilers, complete steam craft of various types and other specialties manufactured by the Marine Iron Works, Station A, Chicago, will be found very practically illustrated and described in a 24-page catalogue which is now being distributed. It is unusually well printed and contains much matter which will interest every one of our readers.

Users of hammers will find a valuable catalogue in the one issued by the David Maydole Hammer Company, Norwich, Chenango County, N. Y., which illustrates and describes in much detail the Maydole hammers. These tools are made of solid crucible cast steel in almost inconceivable variety, as shown in the catalogue. The illustrations are printed in three colors and every type of hammer is shown. The catalogue comprises 38 pages with cover.

Deming Power Pumps is the title to Catalogue F which is now being distributed by the Deming Co., Salem, Ohio. These pumps are described as the "acme" of efficiency. This catalogue is a special one and is limited to triplex power pumps and deep well pumps. It comprises 52 pages and is very fully illustrated with a great variety of pumps, each type being concisely described. There are many tables of capacities, sizes and other such information such as any user of a pump would wish to know.

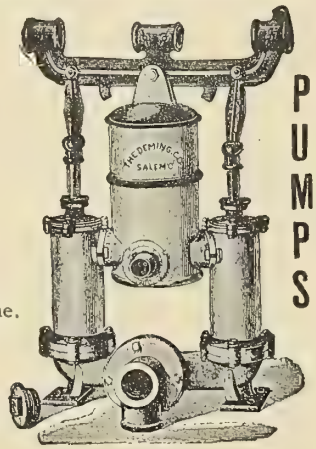
An Advertisers' Follow-Up System has been devised for mechanical and class advertisers who are interested in knowing the traceable results of each and every advertisement or medium which he advertises in, as well as other forms of publicity. Many crude and imperfect methods of keying ads have been tried and abandoned as unsatisfactory and misleading. There has been a great demand for a practical system, which shall show both the cost of publicity and the results in inquiries and sales, for ready comparison. This problem seems to be the nearest yet solved through the use of the "Advertisers' Follow-Up System" in the form of a loose leaf book, size 11 by 16 inches, designed and perfected by Frank M. Ho-glen and Clarence P. Day, for the purpose of easily and quickly recording every inquiry and sale produced through publicity, tracing and posting each inquiry and sale to its true source, besides keeping a check on each and every advertisement and medium, thereby eliminating all theory and guesswork as to the real paying qualities of the mediums used. The book is handsomely bound in patent loose leaf covers, has double index and enough ledger pages to last for years. Extra loose sheets may be inserted at any time and the old sheets removed and filed away when completed. Unfortunately there is not attached to the book a mechanical prod which will force advertisers to give the proper attention to designing and changing their advertisements. Further information and price may be had by addressing Ho-glen and Day, Rooms 1305-7 Nassau-Beekman Building, New York.

Ship's Deck, Bilge, Triplex Power

PUMPS

We make
HAND AND POWER PUMPS
for all purposes.
Send for Catalogue.

The Deming Company,
SALEM, OHIO.
HENION & HUBBELL,
Gen'l Western Agts., Chicago Ill.

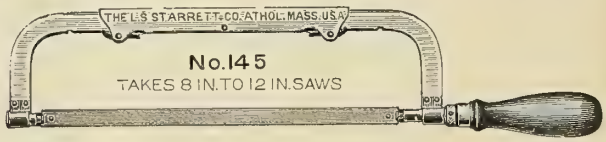


PUMPS

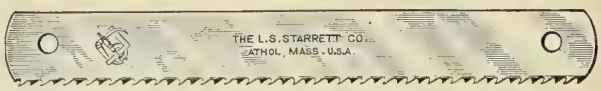
AMONG THE FINE MECHANICAL TOOLS WHICH WE MANUFACTURE FOR THE USE OF ENGINEERS AND MACHINISTS

ARE

Hack Saws and Frames



FOR SAWING TUBING, BRASS, COPPER AND SHEET METAL.



These blades are made of the finest steel; the teeth are sharp and too hard to file.

Every Engineer should have them among his tools.

The L. S. Starrett Co., Athol, Mass.

A copy of our Catalogue No. 16 L can be had for the asking.

The ice machine supplies, manufactured by the Triumph Ice Machine Company, Cincinnati, Ohio, will be found fully described in catalogue C, which is now ready for distribution. This catalogue is neatly printed on coated paper and bound in dark green cover. It contains 48 pages and has many illustrations of all sorts of supplies used in refrigeration. Anyone who is interested in the subject of ice machines will find one of these catalogues very instructive.

For Steam Making Refrigerating **Apparatus**

MECHANICAL THERMOMETERS

HOHMANN & MAURER MFG. CO. ROCHESTER, N.Y. TRADE H&M MARK

For All Engineering and Manufacturing Purposes

Write for Illustrated Catalogue M.

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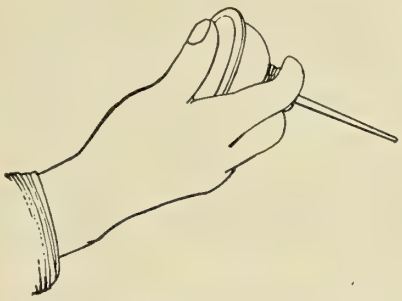


The Nicest Thing

You can use is

DIXON'S

Pure Flake

GRAPHITE

in an ordinary

SQUIRT CAN.

For valves and cylinders and all bearings there is nothing to equal Dixon's graphite. Sample free.

JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J.

The mechanical rubber goods manufactured by the George W. Knowlton Rubber Company, 72 Broad street, Boston, Mass., are concisely described and illustrated in an 8-page catalogue with cover which is now being distributed. Among the several specialties referred to are ring packing, high pressure marine steam packing, spiral packing, pump packing, flax packing, molded wire gaskets, etc.

A booklet of designs of modern launches, fast cruisers and speed boats is published by Harry J. Perkins, Naval Architect, Grand Rapids, Mich. It contains 18 pages, each page having an engraving of a boat of some kind, showing in considerable detail its design and arrangement. Some of the pictures are halftone engravings, others are line drawings. Anyone who is at all interested in the subject of these several types of small craft will find this booklet very interesting. We infer that sample copies can be had free by referring to Marine Engineering.

The Toquet Launch and Motor Company, Saugatuck, Conn., is distributing a neat catalogue printed in two colors, describing the various types of launches which this company manufactures, also its gas engines and accessories.

The hydraulic valves and fittings of the Watson-Stillman Company, 204 East Forty-third street, New York, are fully illustrated and described in Catalogue 63. This catalogue comprises over 100 pages and is printed on heavy coated paper; there are illustrations almost without number, together with tables of prices, sizes, etc. Very few catalogues are as complete or as well-conceived as this is. Any of our readers who have to do with hydraulic and similar work will find a copy of this catalogue of much value for reference.

The Pierce vapor and marine engines and complete launches will be found fully described in a catalogue which is being distributed by the Siegel-Cooper Company, Sixth avenue and 18th street, New York, which controls the Eastern territory for the sale of these engines and launches. The catalogue comprises 48 pages and is very neatly printed in two colors. Launches of many sizes and types are shown, including side wheel and stern wheel boats for shallow waters. There are also many testimonials. Copies can be had by referring to Marine Engineering.

The course in navigation which has been established by the International Correspondence Schools, Box 1111, Scranton, Pa., will be found fully described in a 32-page booklet which is now being distributed. In order to have the subject thoroughly understood, the system of instruction as carried out at this school is fully explained, and much information is given regarding its books, papers, etc. The balance of the pages are devoted to explaining in much detail the system of instruction and how navigation is taught. This refers to both lake navigation as well as to navigating the sea. A synopsis of the many subjects occupies a dozen pages or so, making it possible for the prospective student to procure a thorough idea of the course.

A Little Blue Book On Rope Transmission is the title to a beautifully published booklet issued by the American Manufacturing Company, 65 Wall street, New York. It is very handsomely and profusely illustrated and printed with unusual taste in two or more colors, and is bound in a neat blue paper cover. The subject matter covers not only the subject of rope transmission, but gives a great deal of information regarding the material used by this company in manufacturng rope and cordage, and the manner in which the manufacturing is done is fully illustrated. There is also much information regarding splicing, etc. So popular has this book been that this is the third edition that it has been necessary for the company to issue. Copies will be sent free to our readers who refer to Marine Engineering.

Walworth Mfg. Co., 130-136 Federal St. BOSTON

Specialty of **BRASS VALVES** and Fittings for Marine Construction

Extra Heavy Valves, Bent Pipe and Fittings for High Pressure Work

Sole Manufacturers of

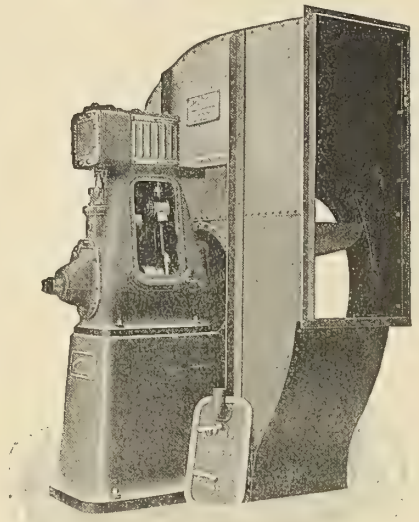
Van Stone Pipe Joint

Which does not Weep under heavy pressure

Send for Catalogue **N. Y. Office: Park Row Building** Prices and Terms on Application

BUFFALO STEEL PLATE FANS

FOR FORCED COMBUSTION



BUFFALO FORGE COMPANY,

BUFFALO, N. Y.

City Air quickly ruins in color and substance painting based on white lead.

ZincWhite

Is the obvious alternative. Unaffected by any atmospheric influences, it retains its beauty and protective value longer than any other white pigment.

FREE—Our Practical Pamphlets:

"The Paint Question,"
"Paints in Architecture,"
"House Paints: A Common Sense Talk About Them."

THE NEW JERSEY ZINC CO.

11 BROADWAY, NEW YORK

Spray Pumps and Nozzles is the title to a catalogue now being distributed by the Deming Company, Salem, Ohio. Pumps of this kind are illustrated almost without limit and a great variety of accessories is shown.

Neatly lithographed desk blotters and calendars are being distributed by M. W. Fogg, 202 Front street, New York, referring briefly to the mattresses, bedding and marine upholstery which he manufactures and which are his specialty.

Marconi Wireless Telegraph Up to Date is the subject of an 8-page booklet which is sent to all inquirers by Wyman and Gordon, Worcester, Mass. Only incidental reference is made to the facilities of this firm for manufacturing forgings of all kinds.

The Norwalk Launch Company, Norwalk, Conn., is distributing a neat catalogue which describes not only the launches which this company manufactures, but also the special features of the Norwalk gas engine, together with a new type of atomizer and a new muffler.

Users of search lights will find an instructive folder in the one issued by the American Acetylene Company, Masonic Temple, Minneapolis, Minn. A number of illustrations are given showing fully the construction and the operation of this search light, and pictures of the generating apparatus will also be found.

New Jersey copper Paint is evidently very popular, judging by the vast collection of testimonials printed in a booklet which is now being distributed by the New Jersey Paint Works, Jersey City, N. J. The booklet contains a great deal of information regarding the several kinds of submarine and other paints which this company manufactures.

A Typical Webster Plant is the title to a neat folder being distributed by Warren, Webster and Company, Camden, N. J. It refers briefly to the very large installation which this firm has made of the Webster system of steam circulation. Webster feed water heaters and purifiers and Webster oil and steam separators in a large manufacturing plant in the West.

Users of boat hardware will receive, upon sending to C. D. Durkee & Co., 3 South street, New York, "A Sure Sign of——" The balance of the pages of the folder explain fully what the sign is.

Users of portable ratchet wrench drills will find a tool of this sort well illustrated and described in a 4-page folder which is being distributed by the Universal Manufacturing Company, 22 China street, Cleveland, Ohio.

Very neat calendars are issued by the Fort Wayne Electric Works, Fort Wayne, Ind. On one side is a calendar for the month and on the back a calendar for the year. We infer that copies of these calendars can be had by any of our readers upon applying for them.

The roller grates, manufactured by the New England Roller Grate Company, are excellently illustrated and briefly described in a folder which is being distributed by this company. This business, which was formerly in Boston, has recently been removed to Brightwood, Mass. The grate is described as a practical shaking grate, a genuine fuel economizer and smoke preventer.

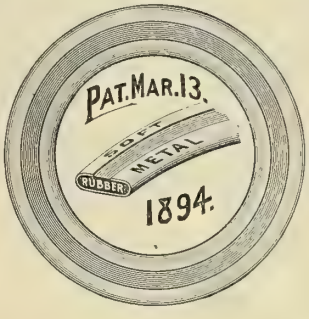
The State Steam Engineering School, under the management of James Coyne, 27 Tremont Row, Boston, Mass., will be found well described and illustrated in a neat booklet now being distributed. This booklet gives much information regarding the scope of the school and shows in illustrations the many facilities for giving practical information in steam engineering.

The Craig Ship Building Company.—The Craig Ship Building Company of Toledo, O., has just been organized to carry on on a larger scale the business which has been so successfully established and managed by John Craig. The new company also takes possession of the property of the Toledo Dry Dock Company. The capitalization is $1,250,000. The officers of the new company are: President, John Craig; vice-president, E. W. Tolerton; treasurer, John F. Craig; secretary, A. H. Morrill, and general manager, George Craig.

BUSINESS NOTES.

Orders for Sails.—Messrs. Wilson and Silsby, Rowes Wharf, Boston, Mass., received an order a few months ago for sails for a racing yacht called the *Speedwell* from New Zealand. All of the yachts in those waters were fitted either with sails made locally or with sails imported from England; and it was a great surprise on Regatta Day to local yachtsmen to have the *Speedwell* carry off the first prize by nearly six lengths. During the past few months, Wilson and Silsby have received orders from all corners of the world, particularly from Scandinavian and English yachtsmen. It is also understood that Wilson and Silsby are making a set of sails for the German Emperor's yacht *Meteor*, which will be used in her trip across the Atlantic. The sails, as well as the awnings, hatch covers, boat covers and other canvas goods for Commodore Bigelow's beautiful new steam yacht *Pantooset* were also furnished by Wilson and Silsby.

THE
McKim Gasket



Cannot Blow Out.

Can be re-applied indefinitely.

Made of packing encased in soft rolled metal, combining the elasticity of one with the strength of the other. All sizes of manhole and hand-hole plates and pipe fittings.

McCORD & CO.
104 Broadway - - - - New York
1471 Old Colony Building - - Chicago

Captains of Industry.—Mr. John Markle, president of the Sprague Electric Company, and Lieut. Frank J. Sprague, technical director of the same company, were included in the "Captains of Industry" who gave the luncheon in honor of Prince Henry at Sherry's, February 26th.

A Fine Steering Outfit.—The steering apparatus on the German Emperor's yacht *Meteor* was designed and built under the supervision of George Loud, treasurer and manager of the Edson Manufacturing Company, 132 Commercial street, Boston, Mass. This work was in line with Mr. Loud's extensive experience, as he also furnished steering gear for the *Independence*, the *Volunteer*, the *Puritan*, the *Mayflower* and many other famous yachts. Ball bearings were used in the *Meteor's* apparatus. The wheel is 54 inches from tip to tip. The hub is of highly polished brass and there are ten rosewood spokes. The felloes are of teak and the rim of ebony. Where the main spoke passes through there is inlaid in the rim the coat of arms of the German Emperor done in gold and silver. These and other decorations make probably the most beautiful steering wheel ever made.

The New Factory of M. W. Fogg.—Mr. M. W. Fogg, the well known manufacturer of cushions, mattresses and bedding for yachts and steamships, has recently occupied a new factory and wareroom at the corner of Fulton and Front streets, New York City. The building has undergone extensive repairs, and is now thoroughly equipped for carrying on a large business in these special lines. All machinery necessary for preparing the hair mattresses, etc., is driven by an electric motor. The three upper floors of the building are devoted to the manufacture of the mattresses and cushions, and the lower floor, handsomely decorated, is the salesroom where can be seen the various styles of upholstery furnishings and hangings. In this new factory the facilities of business have been increased and deliveries can be made promptly.

Free Samples of Wisconsin Graphite Products.—Wisconsin graphite paint has been most universally acknowledged by users of paint to be one of the best for all purposes for which a paint of this nature is used. It comes in six different shades, has a bright lustre and an even surface, and will outlast most any similar preparation. The claim is made that it practically incorporates itself into the iron and steel wherever applied. The Wisconsin Graphite Company, North Side, Pittsburg, Pa., has a most excellent graphite preparation, known as the Wisconsin Graphite Stack Paint, which will wear for years and is being largely used on board steamships, yachts, etc., throughout the country. This company manufactures the well-known Wisconsin Flake Graphite Lubricant, which not only obviates friction, but is without grit and is absolutely smooth. It will be well for users to consider the claims for Wisconsin Lubricant, as it is especially adapted for propelling engines, dynamos and machinery. A free sample will be sent to anyone upon request.

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Our Flexible Steel Armored Conductors are endorsed by engineers for use in Marine or Ship Wiring, because of the high grade insulation, thorough protection from mechanical and other injuries, entire flexibility and low cost.

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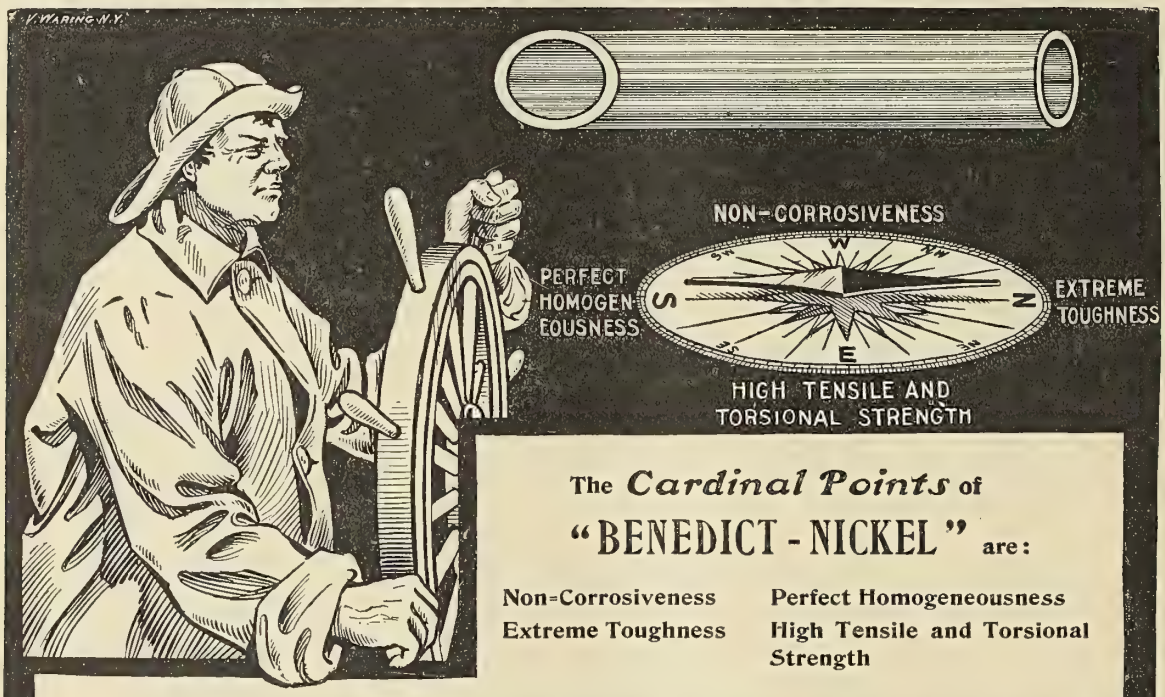
Buffalo Forge Company's Specialties.—The Buffalo Forge Company, Buffalo, N. Y., has many large and important orders on hand for its various specialties. It is installing a large heating and ventilating plant at the works of the American Smelting and Refining Company; a heating plant in the Siegel-Cooper Company store, New York, and drying plant in the Abendroth and Root shops for drying galvanized iron work. By substituting this system for the old-fashioned methods of drying, it is believed that the time will be reduced at least one-fourth of that formerly consumed. Less space is also occupied. The Buffalo Company is building a fan for use in mine ventilation which has a 250-inch housing and is constructed throughout of steel plate rigidly stiffened and braced. The rotating element of the fan will be driven by a direct-connected horizontal engine, which has a speed of 150 revolutions per minute. This fan is built to deliver 125,000 cubic feet of air per minute at ordinary working speed.

Free Catalogue of Besly Specialties.—We are informed by Messrs. Chas. H. Besly and Company, 10-12 North Canal street, Chicago, Ill., that there is no let-up of any kind in their business. As many orders as ever are being constantly received for their well-known Gardner grinder with spiral ground disks, recent shipments having been made to California, Washington, Oregon, Wisconsin, Ohio, Pennsylvania and elsewhere. The grinder has proved one of the most popular specialties that this company has ever had. The hundreds of users of this grinder are very liberal in their orders for spiral circles, which are made from emory and corundum, or from corundum alone, and which, it is claimed, will do from 50 per cent to 200 per cent more work than usual grinding surfaces. This firm is also receiving many orders for Helmet oil Badger and Bonanza cups. A copy of this firm's catalogue, giving full information regarding all the specialties handled, with discount sheets, will be mailed to anybody upon inquiry. .



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These qualities make "Benedict-Nickel" peculiarly adapted for condenser tubes, and for every other purpose where highly non-corrosive tubing is required.

These are the best tubes for condensers ever devised. They positively resist electrolysis. They have steadily gained in favor with leading engineers and high naval authorities *because they do exactly what we claim for them.*

Their manufacture has long since passed the experimental stage. Their superiority over copper and brass tubes has been demonstrated by *actual use.*

The basis of the high non-corrosiveness of "Benedict-Nickel" is its inert nature, due to the combining of nickel with copper. The metal contains no zinc nor any other weakening metal. It is perfectly homogeneous.

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We publish a "Treatise on Electrolysis of Condenser Tubes," which gives the full scientific reasons for the superiority of "Benedict-Nickel." Send for it.

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ENGINEERING DATA.

There has been such a demand for engineering data in compact form that we have established a bureau for this purpose.

The plan is to supply 20 cards a month. These cards are to give information regarding new vessels, such as has appeared in the columns of Marine Engineering and in other publications; also data regarding ship riveting, labor costs per ton dead weight in England and on our Great Lakes; data regarding boilers of different types; dimension weights and horse power per ton of various types of vessels; fuel economy on large ships per one hundred-ton miles; prices of battleships for the United States Navy per knot ton and per horse-power ton; similar data regarding cruisers and other naval vessels, design dimensions of engines, new formulæ; in fact, all current data useful to the practical designer and engineer, etc.

These cards will be of the standard library size, suitable for filing with personal data, in the standard library index boxes.

This service will include 20 cards a month, or 240 cards a year. The price is as follows:—

One year	$4.00
Six months	3.00
Three months	2.00

In many instances special data can be furnished, when desired, at a slight advance in cost.

Fuller information regarding this service can be had upon application to

MARINE ENGINEERING,
309 Broadway, New York City.

Buffalo Feed Water Heater and Purifier.—The Northern Steamship Company of Buffalo, N. Y., which has been thoroughly overhauling the steamships *Northwest* and *Northland* by installing new boilers and making other improvements, has ordered from Robert Learmonth, Buffalo, N. Y., Buffalo feed water heaters and purifiers for each ship.

The Litharge Paint.—The Litharge Paint Company, 103 East Lombard street, Baltimore, Md., has had the severest tests made of this paint by the principal steamship lines running out of Baltimore. The Atlantic Transport line, after testing it on the hulls of its ships, stacks and boilers, is now covering the entire ship with it. Mr. W. H. Johnson of that company writes that after the paint had been on the stacks and boiler doors for two months it had a good hard gloss to it, and was in good condition. It was put on the hull of the steamer *Juniata* of the Merchants' and Miners' Transportation Company, also on the boiler doors and on the side plates in the hold. The captain reports that it is in excellent condition, and to be better than anything he has ever seen. Litharge Paint is exclusively manufactured by The Litharge Paint Company, who invites any well-known company which may be in need of a paint better than it has, to make any test whatever of this paint. It is especially made for marine and submarine work, and is not affected in the least by changes of climate, acids, soot, heat, etc.

Important Coroner's Jury Verdict.—It will be recalled that on November 26 last a terrific and fatal accident occurred in the boiler plant of the Penberthy Injector Company, Detroit, Mich. A coroner's jury has spent over nine days making a very exhaustive investigation of the cause of the accident. The verdict, which completely exonerates the Penberthy Company and the engineer, states that the company and its employees had given proper care and attention to the boiler, but that scientific and expert testimony presented to the jury showed that the boiler was not constructed of the material nor in the good workmanlike manner called for by the specifications furnished for its construction, and, therefore, that the makers of said boiler are responsible. After the testimony was all in, the verdict was reached by the jury in less than two hours. The Penberthy Company has secured control of a large tract of land in Detroit and expects to build immediately a larger plant and to equip it with all of the very latest improved mechanical devices. In commenting upon the verdict the Detroit *Journal* speaks editorially in the most complimentary terms of the care which the Penberthy Company gave the steam plant.

Towing Machines.—We are informed by the American Ship Windlass Company, Providence, R. I., that the Standard Oil Company has taken up the subject of tow barges as general freight carriers, something on the lines of the article which appeared in the February issue of Marine Engineering. The company is now building two steamers of 12,000 tons capacity each; two tow barges of 12,000 tons; and is also building two oil barges of about 8,000 tons. Mr. Frank S. Manton, agent of the Ship Windlass Company, reports that the Standard Oil Company has ordered six of this company's towing machines, and that he also will put towing machines on the barges as well as on the steamers. In this way there will be a relief from strain simultaneously at both ends of the hawser if both towing machines are at work at once. Probably in ordinary weather only one towing machine will be used, although the motion of a long hawser would be easier with both machines at work. The large towing machines which are to be put on the vessels will each carry 300 fathoms of two-inch in diameter steel wire hawser, so that by shackling the two hawsers together there will be a length of 600 feet. Between the 1st and the 15th of January, the American Ship Windlass Company sold ten towing machines, and, in the middle of March, received a cable order from Russia for two machines.

A Large Gas Engine Business.—The Grant-Ferris Company, Troy, N. Y., makers of the Howard hydrocarbon motors, both two and four-cycle types, comprising a variety of fourteen sizes, has been successful in competition with a number of prominent gas engine builders, in securing a large contract from the Steel Boat Construction Company, of H. Scherer and Company, Detroit, Mich., for 250 motors; all to be delivered this season. The schedule calls for graded sizes in lots of fifteen to twenty-five each. This order on top of previous contracts with other firms gives the Grant-Ferris Company plenty of motor business.

A New Machine Company.—The Iroquois Machine Company, 150 Nassau street, New York, has recently been organized by W. W. Gibbs and others. The company will manufacture quite a line of improved machinery, including a full line of automatic and plain drop hammers, swagging machines, rolling mills, roller bearings, grinding machines, etc. The company is understood to have ample capital back of it. It has purchased the plant and business of the Universal Machine Company, Providence, R. I., and has rented large adjacent buildings so that business is organized at once on a comprehensive scale.

Small Gas Engines.—A small gasoline motor under one-horse power must be proportionately stronger in combination with fewer parts and greater simplicity than its larger brothers. These points are found in the new model, special 3-4 horse-power motor manufactured by the Fairfield Motor Company, Bridgeport, Conn. It is not only neat and strong in appearance but the acme of simplicity. The igniter is entirely new in design, extremely simple, with but one spring and no small, delicate or trappy parts. The cylinder and cylinder-head are water jacketed. It has a bronze circulating pump, and all fittings, including the vaporizer, are of the same quality as on the regular line of large engines. It is one of the smallest practical 2-cycle engines ever offered that is not a toy, but made for hard work.

Correspondence Instruction.—An unfortunate tendency among most students who are anxious to fit themselves for special lines of work is to skim over the elementary lessons as hurriedly as possible. The American School of Correspondence, Boston, Mass., believes that one of the leading causes for its success in instructing students is the fact that it has given such careful attention to elementary work, so that students have been able to understand much more thoroughly the subjects which they have undertaken to fit themselves in. When books were more expensive and papers were few, it was a difficult thing for a man of limited education to secure the advancement in his occupation that he deserved; now, however, by means of the instruction papers and other literature which this school furnishes, a man is enabled to continue with his regular work and, at the same time, by correspondence instruction, secure a very comprehensive grasp of any line of work which he prefers to undertake. Full information regarding the papers and books, as well as the courses offered by this school, can be had by writing for them.

SPECIAL NOTICES.

Announcements under this heading will be inserted at the uniform rate of thirty-three-and-a-third cents a line. Lines average ten words each.

WORKING DRAWINGS OF GAS ENGINES WANTED.

We desire to secure working drawings of marine gasoline engines of the 4 cycle type, or about 4-horse power.
GAS ENGINES, care Marine Engineering.

SHIPYARD SUPERINTENDENT WANTED.

The Superintendent of our shipbuilding department has resigned his position and no successor has yet been appointed.
RISDON IRON WORKS, San Francisco, Cal.

WANT SOME GOOD SPECIALTIES TO SELL.

A machinist and marine engineer, with American and English first-class licences, intends making an extended visit in June to the vicinity of Glasgow, Scotland, and wishes to act there as agent for some firm or specialty so as to clear his expenses. Address, ENERGETIC, care Marine Engineering.

Asbestos Specialties.—The H. W. Johns-Manville Manufacturing Company, 100 William street, New York, has been awarded a number of very large orders lately for a sectional asbestos covering, for a number of large hotels and manufacturing establishments in all parts of the country.

Philadelphia Pneumatic Tools.—In order to more efficiently handle the rapidly growing business which has developed on the Pacific coast, the Philadelphia Pneumatic Tool Company, 1038 Ridge avenue, Philadelphia, Pa., has appointed Berger, Carter and Company, 330 Market street, San Francisco, Cal., representatives for the Pacific coast.

Williams Marine Paints.—Samuel J. Williams, who recently removed to 11 Broadway, New York, has already been obliged to increase his office facilities because of the increased demand for Williams submarine paint, Williams copper paint, Williams seam paint and Williams wood anti-fouling paint. In addition to these special paints, Mr. Williams supplies white lead, zinc, colors and everything else in the paint line.

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$11. for a Set
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Our Portable Instruments are recognized as **the standard** the world over. Our **Voltmeters** and **Ammeters** are unsurpassed in point of extreme accuracy and lowest consumption of energy.

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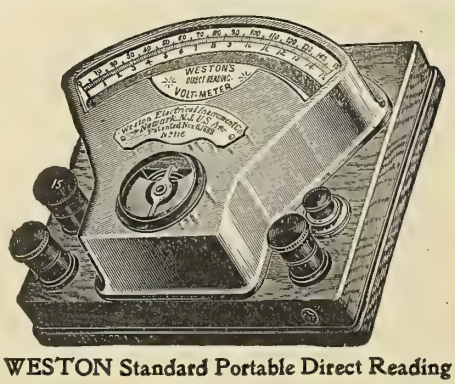

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" 103, C. H. Hall, Box 512, New Berne, N. C.

TRADE PUBLICATIONS.

Users of gas engines will find a very interesting catalogue in the one issued by the Eagle Bicycle Manufacturing Company, Torrington, Conn., which describes very thoroughly the gas engine manufactured by this company. The catalogue is very neatly printed in two colors with marginal headings, and the general style of the engine is shown by a large cut.

Users of interior telephones will be interested in a catalogue being distributed by the Clark Automatic Telephone Switchboard Company, 16 Custom House street, Providence, R. I. The general arrangement of the system is fully shown in the catalogue, and, as the system is intended for use on vessels as well as in offices and elsewhere, it will appeal to many of our readers.

The oil burners, forges, drop forgings and crucible furnaces manufactured by the Union Drop Forge Company, 80 East Ohio street, Chicago, Ill., have a special catalogue devoted to them. It is 6 by 9 inches in size and is well illustrated, containing a number of illustrations of each of the specialties referred to. The oil burning devices will be of special interest to our readers. Copies of the catalogue can be had by referring to Marine Engineering.

The kerosene oil engines manufactured by the International Power Vehicle Company, Stamford, Conn., are fully described in a catalogue which the company is now distributing. It is fully illustrated with fine engravings and the construction of the engines is well explained. The marine type of engine is fully described, as well as the stationary engines, and brief reference is made to the engines designed for motor vehicles. Everyone interested in explosive engines should have a copy of this catalogue.

Of interest to navigators is the title to a catalogue now being distributed by Riggs & Brothers, 310 Market street, Philadelphia, Pa. The catalogue is devoted to quite a variety of specialties which appeal to navigating officers, among them being the following: Patent depth gauges for taking soundings at any speed, improved sextants, improved ship's bell clocks, Pilot night glasses, the Neptune marine glasses, portable electric lights, compasses, chronometers, etc. Copies of the catalogue can be had free by referring to Marine Engineering.

The International Gas Engine Co., 26 Broadway, New York, has published an excellent catalogue describing very fully the gas engine which this company makes. The catalogue is 6 by 9 inches in size and comprises over 40 pages. It is neatly bound in heavy paper cover, is printed on coated paper and is well-illustrated. The illustrations of the engine are full-page size and many important parts of the engine are shown by means of smaller engravings. In the back part of the catalogue are many full-page pictures of yachts and boats of various kinds in which engines of this make have been installed. There are also many testimonials and users of the engine.

A beautifully illustrated catalogue has just been published by the F. W. Devoe and C. T. Raynolds Company, 101 Fulton street, New York. It is 9 by 12 inches in size and contains a great many full-page engravings of some of the best known steam yachts, giving the name of the yacht, as well as that of the owner, together with the length, breadth and depth. Opposite each picture in most cases is a letter from the master of the yacht speaking in high terms of some of the various specialties manufactured by this company. These specialties include marine white and black, hard enamel colors, smokestack paints, deck colors, deck varnishes, spar varnishes, etc. We do not know whether copies of the catalogue will be sent free, but they can probably be had upon request by addressing Dr. I. W. Drummond, of the Devoe and Raynolds Company and mentioning Marine Engineering.

When writing to advertisers please refer to Marine Engineering.

The Rhode Island Motor Co., Providence, R. I., is sending out to all inquirers folders regarding its gasoline engines. The folders contain pictures of the engines, together with information regarding sizes, finish, etc., and lists of boats' fittings which this company sells.

The Morris Blow-off Valve for boilers, which is manufactured by the Chapman Valve Manufacturing Company, Indian Orchard, Mass., has a special folder devoted to it which the company is now distributing. Several drawings are given, showing the design and application of the valve, and there is sufficient text to fully explain the value of these valves. Copies can be had upon application to the company.

The Long-Arm System Co., Cleveland, Ohio, now has ready for distribution bulletin No. 5. This bulletin gives the latest information regarding this company's system of power doors and hatch gears for the preservation of life and property at sea. A number of illustrations show the operation of the system and there is a complete description of the whole system, including the different styles of power stations and different styles of doors. The subject is one that will be of much interest to many of our readers.

The latest machine tool catalogue issued by Hilles and Jones Company, Wilmington, Del., is known as catalogue S. It is one of the striking novelties in the line of a catalogue of the season, being bound in burlap. The catalogue comprises 28 pages. Each page contains several illustrations of tools of some sort for working plates, bars, structural shapes, etc. It is a very handsome specimen of printing and is a valuable book for reference to anyone who has to do with machinery for boiler shops, plate shops, engine shops, and other parts of a shipyard.

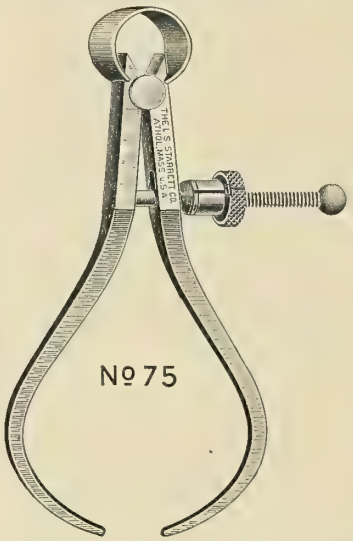
Catalogue No. 19, descriptive of the automatic and other injectors, ejectors, water gauges, lubricators, oil cups, grease cups, etc., manufactured by the Penberthy Injector Company, Detroit, Mich., is now ready for distribution and a copy can be had by any of our readers upon application. It is well presented in a dark green paper cover with the letters in gold. The text covers 68 pages. There are a great many illustrations and the text is evidently right to the point. What adds much to the completeness is a fine index. Every engineer should have a copy of this catalogue on hand for reference.

The many important features of Smooth-On iron cements for use on steam vessels of all kinds, in making repairs on engines and boilers, as well as any other iron apparatus, is well brought out in a catalogue issued by the Smooth-On Manufacturing Company, 547 Communipaw avenue, Jersey City, N. J. The catalogue is 4 by 7 inches in size, comprises 56 pages, and is very neatly published. It contains many illustrations of repair jobs which have been made with this cement, and gives full data regarding many which have been made on steam vessels and elsewhere. A number of very interesting jobs referred to were made on pitted propeller blades, as well as on hulls and machinery of steel vessels.

The Philadelphia Pneumatic Tool Co., 1038 Ridge avenue, Philadelphia, Pa., now has ready for distribution a 32-page catalogue giving a great deal of information regarding the pneumatic tools which this company manufactures. The catalogue is printed in two colors and is very fully illustrated with pictures of hammers for chipping, calking, riveting, etc., together with drills of all sorts, pneumatic riveters, foundry rammers, pneumatic hoists, etc. The size of the catalogue is 6 by 9 inches and many of the illustrations are nearly full-page size, making the catalogue of much value in showing practical applications of the several tools. The catalogue is not only very attractive in appearance but it contains much useful information regarding the uses of this particular line of machinery and contains tables of capacities, weights, dimensions, air consumption, etc.

As **EVERY ENGINEER** and **EVERY MACHINIST**

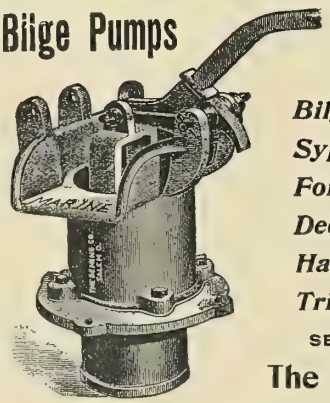
Uses Calipers, he should have only the best. We make them, both inside and outside, from 2½ to 24 inches. The No. 75 style is made in 5 sizes, from 2½ to 6 inches.



These Calipers are fitted with quick adjusting nuts, unless otherwise ordered.
Our Catalogue, No. 16L, of Fine Tools sent free.

The L. S. Starrett Company
ATHOL, MASS.

Bilge Pumps



We make a complete line of

Bilge Pumps,
Syphon Pumps,
Force Pumps,
Deck and other
Hand Pumps.
Triplex Pumps.

SEND FOR CATALOGUE.

The Deming Co.,
Salem, Ohio.

I have designed and built and applied for patents on a

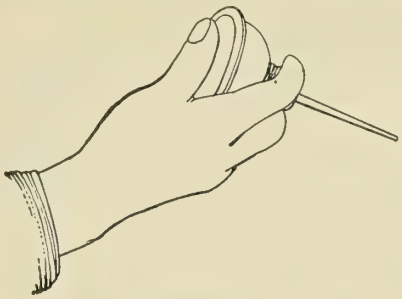
Compound Gas Engine

which has shown an efficiency of three times the ordinary explosive engine.

I believe this engine can be built in sizes from 5 horse power up into the hundreds and show great efficiency.

Manufacturers who are open to a proposition to build and put this engine on the market please communicate with

COMPOUND GAS ENGINE
309 BROADWAY NEW YORK
Care MARINE ENGINEERING



The Nicest Thing

You can use is

DIXON'S

Pure Flake

GRAPHITE

in an ordinary

SQUIRT CAN.

For valves and cylinders and all bearings there is nothing to equal Dixon's graphite. Sample free.

JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J.

Users of paint will want to send for a copy of an 8-page folder issued by the Joseph Dixon Crucible Company, Jersey City, N. J., descriptive of Dixon's silica-graphite paint. On each page is a very handsome picture of a large and fine bridge or other steel structure painted with this paint. The folder is sent out in the form of a mail card and is a very neat specimen of printing.

FOR SALE

25 COMPOUND ENGINES 25

Brand new, of tne Most Economical Type, for Stationary, Electric Light and Marine purposes

IMMEDIATE DELIVERY

Write, stating horse-power steam pressure and speed you require : : : : : :

CHARLES M. HEATH

Broad Street Bank Building, TRENTON, N. J.

The gasoline and kerosene launches built by W. R. Osborn, Croton-on-Hudson, N. Y., will be found well illustrated in a 6-page folder which is now being distributed. The folder contains considerable information regarding the engines and launches and other features of this business.

Users of pneumatic tools will want to send for a copy of an attractive catalogue now being distributed by the Columbus Pneumatic Tool Company, Columbus, Ohio, descriptive of this company's piston air drills. A number of illustrations are given showing the operation of these drills for doing certain lines of work which it is claimed that no other drill can do. The special features and characteristics of this drill are fully explained.

Two bulletins are being sent free to all inquirers by the Fort Wayne Electric Works, Fort Wayne, Ind., one descriptive of a new type of electric motor which this company manufactures, and the other of the corresponding type of generator. Each bulletin is of the same size and is very well printed. Each machine is illustrated intact and also taken asunder, showing the design and construction of the several parts. Anyone interested in electric machinery will find these bulletins of much interest.

One of the handsomest publications of the season is the catalogue of the Truscott Boat Manufacturing Company, St. Joseph, Mich., describing the launches and engines which this company manufactures. The catalogue is 7 by 7 inches in size, bound in a neat cover, and it is printed in two colors. The paper used is heavy coated paper, and the illustrations are very fine half-tone engravings. They are very numerous, giving a great many different pictures of engines, large and small, including sectional views which explain fully the construction and operation of the engine. There are also pictures of different types of boats which this company manufactures.

The Engineering and other specialties, manufactured by the Eastwood Wire Manufacturing Company, Belleville, N. J., are described in a very handsome catalogue, 4 by 7 inches in size, copies of which can be had free by referring to Marine Engineering. The catalogue is bound in a very neat cover of heavy red board and the text comprises 144 pages, well-printed and thoroughly illustrated. The first 75 pages are devoted almost exclusively to illustrations of all sorts of specialties, including valves of all types and designs, and valve fittings; cocks, unions and a great variety of other fittings; whistles and chimes of all kinds; fusible plugs, expansion joints, seamless drawn brass and copper tubing, gauge glasses, lubricators, bronze and iron propeller wheels, brass castings in great variety, etc. The catalogue contains a great many tables of interest to engineers, and altogether is one that should be in the hands of all of our readers. A complete index in the back part adds much to the completeness of the catalogue.

WALWORTH MFG. CO.

TOOLS and SUPPLIES for STEAM WATER and GAS USERS

BOSTON MASS.

Walworth Mfg. Co., 130-136 Federal St. BOSTON N. Y. Office, Park Row Bldg.

Specialty of **BRASS VALVES** and Fittings for Marine Construction

Extra Heavy Valves, Bent Pipe and Fittings for High Pressure Work

SOLE MANUFACTURERS OF

WALWORTH FLANGED—OVER PIPE JOINT

Which does not Weep under heavy pressure

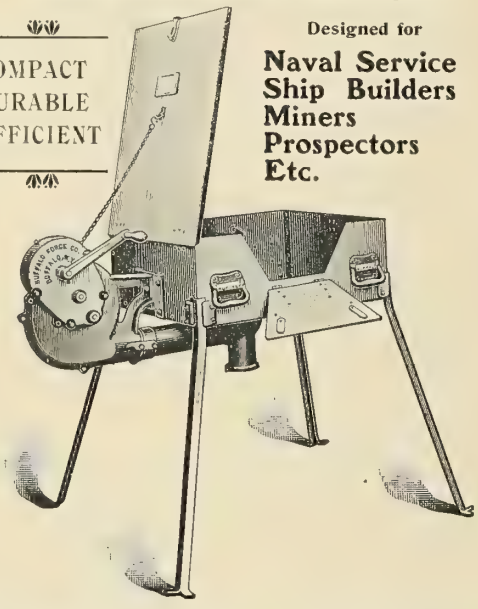
OUR BOOK CONTAINING "TABLES OF DIMENSIONS" OF WALWORTH GATE VALVES, FLANGED FITTINGS, FLANGED OVER PIPE JOINTS, WROUGHT IRON BENDS, ETC., should be in your draughting room.

BUFFALO FOLDING FORGES

Specially constructed for service on shipboard

COMPACT
DURABLE
EFFICIENT

Designed for
Naval Service
Ship Builders
Miners
Prospectors
Etc.



Buffalo Forge Company
BUFFALO, N. Y., U. S. A.

Better Life:

"I have always found that ZINC WHITE gives better life to the paint," said Mr. Armbruster at the last convention of the Pennsylvania Association of Master Painters.

Zinc White

Gives better life to paint because it retains longer the brilliancy of the original gloss and the purity of the original tints. It also gives longer life to the paint itself and to all the desirable qualities of paint.

FREE: Our Practical Pamphlets—
"The Paint Question"
"Paints in Architecture"
"House Paints: A Common Sense Talk About Them"

***The* NEW JERSEY ZINC CO.**
11 Broadway
New York

Up-to-date second-hand machine tools are dealt in very largely by the Garvin Machine Company, Spring and Varick streets, New York, and a partial list of such tools has just been printed. Copies of the list can be had upon application.

An American Invention, a Boiler Without Bricks, is the title to a catalogue being distributed by the Kingsley Patent Boiler Company, 30 Broad street, New York. The catalogue contains 32 pages, 7 by 11 inches in size. There are a number of full-page engravings showing the construction of the boiler and several line drawings which explain fully the detail of the arrangement.

Packing for Marine and Stationary Engines is the title to the latest catalogue issued by the United States Metallic Packing Company, 13th and Noble streets, Philadelphia, Pa. Typographically, it is a handsome catalogue and in size it is convenient for the pocket. There are 16 pages devoted exclusively to the subject matter. Half of the pages contain full-page engravings of this packing. A copy of this catalogue should be in the hands of every engineer.

The engineers' specialties, manufactured by the Peerless Rubber Manufacturing Company, 16 Warren street, New York, will be found very neatly illustrated and described in catalogue No. 50. The catalogue is pocket-size, comprises 40 pages, is bound in a neat red paper cover with gold lettering. The text is printed in two colors, and, like all of the publications of this company, is well done. Among the more interesting features of the catalogue are references to Rainbow packing, Peerless spiral piston and valve rod packings, Arctic ammonia ring packings, sheet and flange packing, Hercules combination metallic stop valve packing, Honest John hydraulic Rainbow core packing, and Success semi-metallic spiral packing, together with other forms of packing, special tubing for pneumatic tools and other forms of tube and hose.

The Grasselli Chemical Co., Cleveland, O., is distributing a very artistic catalogue printed in several colors, describing the ammonia and various other kinds of acids which are the specialties of this company.

The friction sensitive drill presses, manufactured by the Knecht Brothers Company, Cincinnati, O., will be found well-described and illustrated in a 12-page catalogue with cover, which is now being distributed.

Mechanical Draft, What It Is and What It Does, is the title to bulletin No. 46 now being distributed by the B. F. Sturtevant Company, Jamaica Plain, Mass. It is artistically printed in two colors, very neatly illustrated and the text is right to the point.

The search lights manufactured by the Rushmore Dynamo Works, Jersey City, N. J., are evidently very popular, judging by the list of names of vessels and users given in a booklet now being distributed. On the front page of this booklet is the statement: "Our best salesmen are the lights in use." The list of users is a surprisingly large one.

The gas engines and launches, manufactured by the Dutton Engineering Company, Perth Amboy, N. J., will be found well-described and illustrated in a catalogue which is now being distributed. Many pictures of different sizes and different views of the Dutton engine are shown, and also views of many boats in which these engines have been installed.

The automatic circuit breakers, manufactured by the Ward Leonard Electric Company, Bronxville, N. Y., are described with much thoroughness and are well illustrated in a 16-page catalogue, 7 by 10 inches in size, which is now being distributed. In addition to the descriptive matter and the many illustrations, the catalogue contains a great many tables giving much information regarding the capacities, sizes, prices, etc., of these circuit breakers.

BUSINESS NOTES.

Busy Launch Builders.—Palmer Bros., Cos Cob, Conn., made the largest shipments of gasolene motors to foreign countries in March that they have ever made in the history of the business. Among shipments reported were: 50 engines to their London agents, 5 engines to South Africa, and one each to Australia, Sweden and Holland.

Larger Pittsburg Offices.—The enormous business among steel manufacturers in Pittsburg, Pa., has not been felt more by any concern than by the Niles-Bement-Pond Company, 136 Liberty street, New York, because of the demand for machine tools. The company has now taken much larger offices than have been occupied heretofore, and are situated in the new Frick building.

Sprague Apparatus.—During the past month the Sprague Electric Company, 527 West Thirty-fourth street, New York, has had one of the largest lists of sales that has ever been made in the history of the company. There has been an especially large demand for Sprague Split Pole Generators. Many of them are for large sizes, going up into the hundreds, and are for leading concerns in all parts of the country.

Reeves Engine Company.—The business heretofore conducted by the Reeves Machine Company, Trenton, N. J., has grown so fast that the company has found it necessary to greatly extend its facilities for manufacturing. The name of the company has been changed to Reeves Engine Company, and it is understood that new buildings will be erected at once, so that the output of engines may be very largely increased. The new company has been incorporated with a capital stock of $400,000, with Clifton Reeves as president.

Davidson Apparatus.—The two gunboats now being built for the Mexican government at the Crescent Shipyard, Elizabeth, N. J., are to be fitted with a complete equipment of Davidson pumps and evaporating and distilling apparatus. The fishing steamer building at the same yard is also to be fitted with Davidson pumps. Pumps of same make have recently been supplied for yachts *Mohican*, *Vision* and *White Heather*, and dredges working in Manila harbor. These pumps, evaporators and instilling apparatus were manufactured by M. T. Davidson, 141 Broadway, New York.

Chime Whistle and Air-Pump.—The Bowen Manufacturing Company, Auburn, N. Y., is finding a very large sale for its chime whistle and air-pump combined for use on launches and small boats of all kinds where steam is not available. It is very easily operated by giving the handle a short, quick pull, and produces a clear, musical tone of sufficient volume to signal boats, lock and bridge tenders, at a distance of 1 mile or more. It is highly polished in brass or nickel as desired. At the same time it is no toy, but is built for business; is made of the best material and by the best mechanics. Both pump and whistle are made of seamless brass tubing; the pump is powerful; the whistle is a four-tone chime. If desired, the whistle can be placed at a distance from the pump, and connected with it by a rubber or metal tube or pipe.

Chicago Pneumatic Tools.—Since the absorption of the Standard Pneumatic Tool Company by the Chicago Pneumatic Tool Company, whose offices are in the Monadnock Block, Chicago, Ill., J. B. Hurley, who was formerly vice-president and general-manager of the Standard company, has been made manager of the Chicago company, with headquarters in the Chicago office.

For Steam Making Apparatus
For Refrigerating

MECHANICAL THERMOMETERS

HOHMANN & MAURER MFG. CO.
TRADE H&M MARK
ROCHESTER, N.Y.U.S.A.

For All Engineering and Manufacturing Purposes

Write for Illustrated Catalogue M.
NEW YORK 85 Chambers Street
CHICAGO 119 Lake Street
LONDON 57D Hatton Garden

For Advancement in Practical Engineering
STUDY HAWKINS' AIDS
Standard & Up-to-date
$11. for a Set
$1. per Month
Catalog free for the asking.
Theo. Audel & Co. PUBLISHERS
63 Fifth Ave. New York.

MODERN WIRING

Our Flexible Steel Armored Conductors are endorsed by engineers for use in Marine or Ship Wiring, because of the high grade insulation, thorough protection from mechanical and other injuries, entire flexibility and low cost.

Send for descriptive bulletin No. 40,115. Send for catalogue 40,415.

SPRAGUE ELECTRIC COMPANY

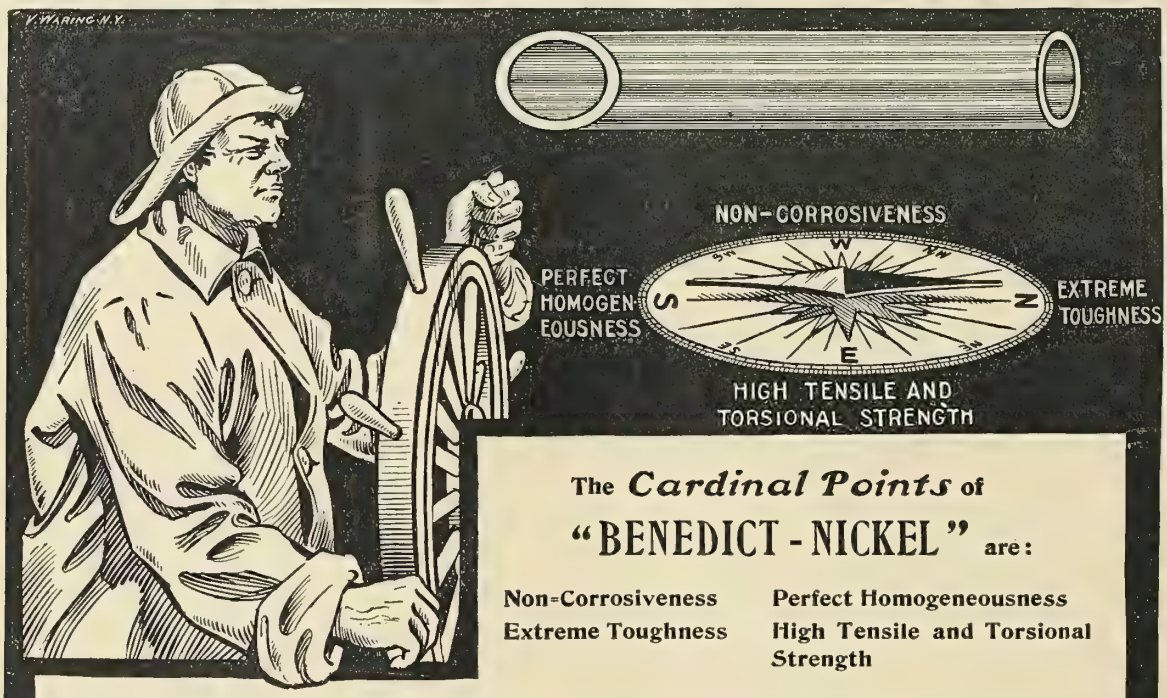
General Offices: 527-531 West 34th Street, New York.

BRANCH OFFICES: CHICAGO: Fisher Bldg. ST. LOUIS: Security Bldg. BOSTON: 176 Federal St. BALTIMORE: Maryland Trust Bldg.

New Marine Railway.—The H. I. Crandall & Son Company, East Boston, Mass., is just putting the finishing touches on a new marine railway in Jacob's shipyard at City Island, New York City. The cradle will be 165 feet long, and the railway has a capacity for hauling out vessels up to a thousand tons or more.

Simplex Electrical Company.—On March 18 there was much surprise all around in the plant of the Simplex Electrical Company, Cambridgeport, Mass. This was on account of a profit-sharing arrangement, of which the management had given notice some time before. There were 52 of the 350 employees who had $3,000 divided among them. The employees held a meeting and presented to the Messrs. Morss, the chief owners, a beautifully engrossed address of thanks, the address having been given by the mayor of the city. This business has grown in a very few years until now it has become one of the most important institutions in the country in the manufacture of insulated wire, electric heaters, etc.

Litharge Paint.—The Litharge Paint Company, 103 East Lombard street, Baltimore, Md., is sending out a folder regarding this paint which states: Litharge paint is not a chemically treated paint. It contains no acids nor alkalies; is a perfect preservative for all metals; cannot be affected by smoke, soot or fumes of acids; can be applied to wood and walls when damp, and will perfectly dry them. Litharge paint will absorb rust, thus stopping all decay of metals. For ship work it cannot be excelled by the best paint in the market. It will stand as long as any other paint applied, will cover four to five hundred square feet to the gallon, is waterproof and spark-proof. Changes of climate cannot affect the paint because it is a perfect compact mass of cremated pigments, being mixed only with the best oils in the market. Litharge paint never gets fat or forms a skin, and will not settle in pots. It has a glossy finish, and is one of the best paints that can be put on wood. It will wear as long and as well on vessels as any other paint.



The *Cardinal Points* of

"BENEDICT-NICKEL" are:

Non-Corrosiveness — **Perfect Homogeneousness**

Extreme Toughness — **High Tensile and Torsional Strength**

These qualities make "Benedict-Nickel" peculiarly adapted for condenser tubes, and for every other purpose where highly non-corrosive tubing is required.

These are the best tubes for condensers ever devised. They positively resist electrolysis. They have steadily gained in favor with leading engineers and high naval authorities *because they do exactly what we claim for them.*

Their manufacture has long since passed the experimental stage. Their superiority over copper and brass tubes has been demonstrated by *actual use.*

The basis of the high non-corrosiveness of "Benedict-Nickel" is its inert nature, due to the combining of nickel with copper. The metal contains no zinc nor any other weakening metal. It is perfectly homogeneous.

The tubes are hot-rolled from solid cylindrical billets, not cast on a core, and given a twist formation like that of a gun barrel. Hence their great tensile and torsional strength.

We publish a "Treatise on Electrolysis of Condenser Tubes," which gives the full scientific reasons for the superiority of "Benedict-Nickel." Send for it.

We sell **Tobin Bronze** at manufacturers' prices.

BENEDICT & BURNHAM MFG. CO.,

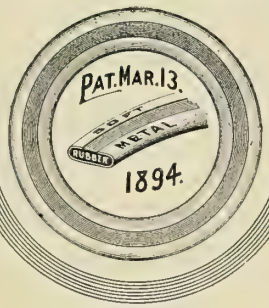
Mills and Main Office, Waterbury, Conn.

New York, 253 Broadway. **Boston, 172 High Street.**

THERE ARE MANY ASBESTOS PACKINGS

But only one brand having twenty threads woven to the inch. That brand is known as "Firefly" and sold only by

BESTOSKING PACKING & SUPPLY CO.,
170 Summer St., Boston
Agents for
TURNER BROS., ROCHDALE, ENGLAND



THE McKIM GASKET

Made of packing incased in soft annealed copper.
Guaranteed to stand 450 lbs. steam pressure.
Strength and elasticity perfect.
Can be reapplied indefinitely.
All sizes for manhole, handhole and pipe fittings.
Write for prices and catalog.

McCord & Co.

104 Broadway, New York
1471 Old Colony Bldg., Chicago

France Metallic Packing.—The superior qualities of France metallic packing have been demonstrated in the recent competitive tests with metallic packings of similar character manufactured by several concerns engaged in such industries. After a test it has been adopted by the Metropolitan Street Railway Company, New York, for eleven 7,000 horse-power engines; New York Gas and Electric Company, for eight 7,500 horse-power engines; Brooklyn Edison Company, for two 7,000 horse-power engines; Boston Elevated Railroad, for two 7,000 horse-power engines, and the New York Central and Hudson River Railroad for stationary work. It is also used in equipping the Manhattan engines in the large power-house in New York City, in addition to several other large contracts. A booklet on packing can be had by addressing A. W. France, Tacony, Philadelphia, Pa.

The Marck Steam Trap.—The sole agents for America for the well-known Marck steam trap are E. F. Houghton & Co., 240-250 West Somerset street, Philadelphia, Pa. This firm is sending out a mailing card in which it offers to install these traps on thirty days' trial, the traps to be returned at their expense if unsatisfactory. Regarding this trap this card contains the following claims: The Marck can be placed in any position, and occupies a very small space, therefore being desirable in marine work. When the Marck is used there is no possibility of freezing if set so as to drain. The Marck is absolutely automatic, and requires no valves except those which control the admission of steam to the apparatus to which the trap is attached. The Marck is regulated to work against any pressure between 1 and 200 pounds without readjustment. The Marck, being open at starting, cannot become air-bound, thus doing away with air-cocks, or vents.

A Big Order for Covering.—Probably the largest order for pipe covering ever placed has been secured by the H. W. Johns-Manville Company from the Pacific Coast Oil Company (which is practically the Standard Oil Company), who will lay about 280 miles of 8-inch pipe from Bakersfield to Point Richmond, on San Francisco Bay, to convey oil to the coast. As the grade is very slight, pumping stations are necessary along the line. On account of the heavy nature of the oil it must be heated to a certain temperature before it can be pumped, and to maintain the temperature of the oil in the pipes between the pumping stations a non-conducting covering is necessary, and the H. W. Johns-Manville Company, 100 William street, New York, is to supply the 280 miles of covering for this purpose, which, when ready for shipment to California, will fill 200 cars. The immense facilities of the H. W. Johns-Manville Company, at both the New York and Milwaukee factories, make it possible to successfully handle an order of this magnitude, and a number of miles of the covering were in transit to Bakersfield within a few days after the order was received.

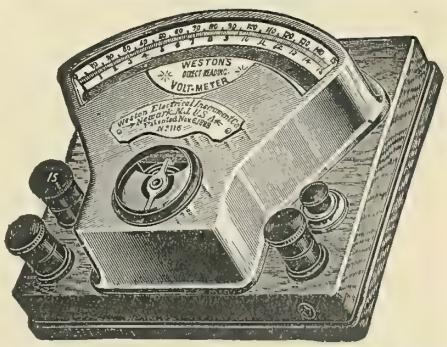
WESTON STANDARD PORTABLE DIRECT-READING

Voltmeters, Ammeters, Millivoltmeters, Voltammeters, Milliammeters, Ohmmeters, Portable Galvanometers, Ground Detectors and Circuit Testers.

Our Portable Instruments are recognized as **the standard** the world over. Our **Voltmeters** and **Ammeters** are unsurpassed in point of extreme accuracy and lowest consumption of energy.

WESTON ELECTRICAL INSTRUMENT CO.,
Waverly Park, Essex County, N. J., U. S. A.

BERLIN:—European Western Electrical Instrument Co., Ritterstrasse 88.
LONDON:—Elliott Bros., 101 St. Martin's Lane.



WESTON Standard Portable Direct Reading Voltmeter.

New Submarine Paint.—Mathew H. Devey, 1615 East Hewson street, Philadelphia, Pa., has had patented and is now getting ready to put on the market a new anti-fouling and preserving paint for ships, which is a combination of glass and other materials. He claims that it can be applied to hulls of either wood or steel as well as other submarine structures, and will prevent their fouling by barnacles and other sea growths. This paint is put on with trowels, and it gradually hardens, with a glassy surface. It is claimed that one coat of this is equal to six coats of ordinary paint. Another use for this compound is for interior purposes wherever it is desired to prevent rust and corrosion.

A Fine Catalogue Free.—Messrs. Charles H. Besly and Company, 10 North Canal street, Chicago, Ill., report their general business very good. They are making shipments of tools and supplies to all parts of the Union. They report numerous sales of their Gardiner grinders. Within the past month shipments of these well-known machines have been made to Oregon, Wisconsin, Connecticut, New York, and Massachusetts. They are receiving many orders for their celebrated Badger and Bonanza oil-cups, and are making liberal shipments of Helmet oil to all parts of the country. Their small tool business is very good indeed. Their 300-page illustrated catalogue will be mailed free to any address upon application.

Coaling at Sea.—The British Admiralty has recently made further experiments in coaling at sea with the marine cableway. H. M. S. *Trafalgar* has had a number of sea trials with the collier *Muriel* in coaling. A test took place while speeding at 11 knots and 35 tons per hour were transshipped. At one time in 33 minutes 21 tons were put across, which rate continued would have meant 40 tons per hour. The test took place in a half a gale of wind, which seemed to have no effect on the capacity of the machine. The course of the ships was frequently altered, making sharp turns to test the gear. All of such trials showed that the device has the ability to accommodate itself to any pull of the lines however sudden. The receiving gear was transferred to the *Empress of India,* and although the officers of this ship had no knowledge of the working of the device they were able to take 35 tons per hour. The British experiments go beyond the American experiments. The United States Navy coaled at 6 knots 20 tons per hour. The British have increased the towing speed to 11 knots, and doubled the capacity delivered to 40 tons per hour. Far more important is the installation now in hand by the United States Navy in equipping the U. S. S. *Illinois* with a Lidgerwood-Miller Marine Cableway, manufactured by the Lidgerwood Manufacturing Company, 96 Liberty street, New York.

Seaboard Steel Company.—A company has been organized in New York especially in the interests of shipbuilders and ship owners to operate a large forging plant within easy reach of New York City. For this purpose the Seaboard Steel Company has secured control of the plant well-known as that of the Whitestone Forge and Construction Company, Whitestone, L. I. This property consists of many acres of land and 550 feet of water front, deep enough to float almost any ship. This gives the best of water connection, and a spur from the Long Island Railroad enters the company's yard. Connected with the property is ample space for a 500-foot drydock. This plant was recently put into excellent condition and is equipped with much modern and up-to-date machinery. The new company intends to erect at once an open-hearth steel plant, with a capacity of 20 tons a day, so that it will not be dependent upon any other company for raw materials. The Seaboard Company starts out with a capital stock of $600,000, which it is proposed later to increase to $2,000,000. There are to be no bonds or other indebtedness. The Morton Trust Company, 38 Nassau street, New York, is the depository for the company. It is proposed to limit subscriptions as much as possible to vessel and iron men. Full information regarding the company can be had from Lloyd M. Scott, 11 Broadway, New York.

A $10 BARGAIN

We have on hand only a few sets of Marine Engineering, as follows:

1899, Vols. III–IV; 1900, Vol. V;
1901, Vol. VI;

bound in black cloth with leather corners and back.

The price for the set is $10.00.
The price per volume is **$4.50.**

Floor space in offices on Broadway costs so much that we shall not attempt to keep complete volumes or back numbers of the magazine any longer, and while the sets last we will sell them for **$10** complete, carriage to be paid by the purchaser. No reduction in price for single volumes.

The period 1899–1901 marks a turning point in the history of shipbuilding in this country, hence these volumes are of great historic as well as technical value.

MARINE ENGINEERING
309 Broadway, New York

SHIP AND MECHANICAL DRAFTSMEN WANTED.

A competitive examination will be held at the Navy Yard, League Island, Pa., May 2, 1902, for the purpose of establishing an eligible register of ship and mechanical draftsmen of the different grades. Pay of ship draftsmen from $5.04 to $3.60 per diem. Pay of mechanical draftsmen from $5.04 to $3.60 per diem. For application and further information apply to Commandant, Navy Yard, League Island, Pa.

Efficiency of Boilers

is a matter of importance to all steamship owners : : :

SPECIFY U. S. STANDARD BOILER COMPOUND

in your list of supplies

IT'S GUARANTEED

to remove Scale and Grease from Boilers : : : : : :

Without Injury to Packing or Metals

With Eagleine Cylinder and Eagleine Engine Oil we lubricate where others fail : : :

EAGLE OIL AND SUPPLY CO.

104 Broad St., Boston, Mass.

The Northern Company's Steamships.—The Northern Steamship Company, which runs the two well-known steamships, *Northwest* and *Northland,* on the Great Lakes, has completely overhauled these ships during the past winter, spending over half a million dollars. On each boat is a duplicate generating set for electric lighting, the engines being furnished by the Buffalo Forge Company, and the generators by the General Electric Company. The ventilation of each ship has also been greatly improved, this work being in the charge of the Buffalo Forge Company, which has installed six Buffalo steel plate fans operated by electric motors on each steamship.

Brass and Copper Specialties.—The Waterbury Brass Company has moved into very large quarters at 122-130 Center street, New York. This is the main sales office of the company, and there is constantly carried in this warehouse a million pounds or so of brass and copper sheets, rods, wire, tubing, and other forms, so that orders of any size and for almost any class of goods can be filled promptly. This stock of goods includes almost anything that could be asked for for marine uses. It includes sheet brass in all the merchantable sizes, wire of all kinds, rods in great variety, not only of brass but of yellow metal, copper, Tobin bronze, etc., bolts of all sizes, brazed and seamless tubing, from the small size, such as are used for lubricating purposes, to the very largest sizes made. There is also everything in the line of copper which would be used in coppersmithing for marine purposes. This company issues a stock list which gives full information regarding all these specialties.

SPECIAL NOTICES.

Announcements under this heading will be inserted at the uniform rate of thirty-three-and-a third cents a line. Lines average ten words each.

SALESMAN WANTED.

Energetic Salesman is wanted, to travel; one with sufficient experience to solicit orders for high-class forgings. Give age, experience, and references. Address,

FORGINGS, care Marine Engineering.

FINE LAUNCH FOR SALE.

Cabin launch 36 1-2 feet long, 8-foot beam. The hull has 1 1-2 foot square oak frame, spaced 9 inches on centers, planked with cedar, copper and brass fastened throughout, not an iron nail, rivet or bolt in the whole construction. Cabin made from solid mahogany with 21 curved plate glass windows, inside of cabin paneled and moulded throughout. Saloon has ceiling veneered with mahogany, and is upholstered and cushioned with the best maroon car plush. Rear cock-pit upholstered in best quality leather. Plush carpet in saloon, a heavy cork linoleum in engine room and cock-pit. All windows handsomely curtained with silk and plush; all fittings polished brass; sideboard, refrigerator, clothes closet, and 3 large berths, invisible when not in use, with hair mattresses. Lavatory and closet, cook gallery and dish closet in engine room. Two cylinder gasoline engine made to order by one of the best makers, which has nickel fittings throughout. Engine also has a paneled mahogany cabinet which covers it entirely from view. All starting and oiling devices are operated from outside of the cabinet. Brass polished hand rail and standards running the entire length of the cabin roof. Planking on the hull is absolutely clear, neither knot nor plug, and does not leak a pailful in a whole season. There is not a thing about the boat that can be made better at any price. There is not a scratch, mar or dent anywhere on the boat, and it looks as well as the day it came out of the shop. There is no better or more seaworthy boat for its size; can be entirely closed in for rough weather, and by letting down the windows can be made practically an open boat. It will make about 10 miles an hour. There could be nothing said about this boat in praise that would misrepresent it in any way, and it will stand the closest inspection. The saloon is 10 feet long, engine room 8 feet, the lavatory and closets are entered from the engine room by sliding doors, large plate glass paneled doors between saloon and engine room, double panel doors from engine room to rear cock-pit; the roof covers the after cock-pit. The entire cabin, including cock-pit, is 24 feet long. After cock-pit and hatches are curtained water tight. It has fresh water tank of 40 gallons capacity connected by pump to lavatory, with best marine flush closets. Gasoline tank has 68 gallons capacity. All tanks are heavy copper. There are a great number of storage lockers, two anchors, several hundred feet of rope, flags, etc. A large roomy boat, and has carried 25 people; excellently fitted for cruising in fresh or salt water. For price address CABIN LAUNCH, care Marine Engineering.

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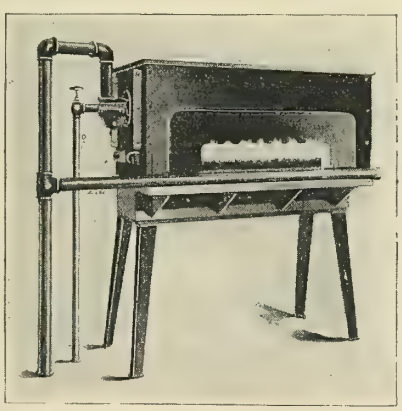
For Boilers, Forges and Furnaces



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Furnace No. 11 has an opening 14 x 2½ inches, to admit bars of iron. Can heat six bars of iron up to a welding point.

Oil Burners, Forges and Crucible Furnaces for Crude Oil Equipment.

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The Peerless Spiral Piston and Valve Rod Packing

It will hold 400 lbs. of steam

Once tried always used

Will run twelve months in high speed engines

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To be used exclusively for packing Ammonia Pumps

This packing is made in several hundred sizes

This packing is specially constructed for ice machine service, of layers of rubber and plies of duck which are so arranged and laid as to best resist the actions of ammonia, cold and heat.

The duck is a specially made duck, frictioned with an entirely new compound heretofore unknown to the rubber trade, and the core and back is of the celebrated Rainbow Packing compound, which is specially adapted to resist ammonia, cold and heat.

This packing is constructed on a strictly scientific basis, and the results obtained thus far have demonstrated fully its value for ammonia packing.

This packing is made in several hundred sizes. The rings may be slipped onto the rod very readily.

The usual rule is to be observed in giving measurements, the depth and width of stuffing box and size of piston rod, in order to get the size desired.

Sole Manufacturers of the

Celebrated Rainbow, Eclipse Sectional Rainbow Gasket, Hercules Combination and Honest John Packings.

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TRADE PUBLICATIONS.

Never-Stick is the name given by the Walworth Manufacturing Company, Boston, Mass., to its boiler blow-off valve. The valve is illustrated and described and dimensions given in an 8-page circular issued by this company.

Bulletin No. 301 describes the Lundell motors for driving ventilator fans and blowers. These motors are made by the Sprague Electric Company, 527 West 34th street, New York City. Various types of inclosed motors are illustrated.

Lundell Fans is the title of the handsome 24-page catalogue No. 304 issued by the Sprague Electric Company, 527 West 34th street, New York City. Desk fans, fans for placing on the wall or ceiling are illustrated. The motors are wired for either direct or alternating current. The latter part of the catalogue is devoted to price lists of the assembled machine and all the parts.

Noted Yachts and Their Lubricants is the title of a well-illustrated catalogue issued by the Vacuum Oil Company and Swan and Finch Company, 26 Broadway, New York City, manufacturers of marine lubricating oils, burning oils and greases. Among the vessels illustrated in the catalogue are the *Hohenzollern, Erin, Kanawha, Arrow, Niagara, Aphrodite*, etc., all of which use oils made by this company.

Printing on tracing cloth has often been attempted, but until recently no ink has been found that will give a clean print which will dry in a reasonable time and keep perfectly. A specially constructed press was also necessary. These complete outfits are manufactured by Golding and Company, 167 Fifth avenue, Chicago, Ill., and it is stated are giving much satisfaction to purchasers. Much valuable time of draftsmen and tracers is saved by using one of these presses for printing titles on drawings.

Cooling Towers is the title of a well-illustrated catalogue No. 1 issued by the Alberger Condensing Company, 95 Liberty street, New York City. The necessity of a cooling tower for cooling condensing water in large city plants where water has to be bought by meter, and in other factories where water is used for cooling purposes, is generally well recognized among engineers. The system which has been developed by the Alberger Company will recommend itself to those acquainted with this subject. Copies of this catalogue may be had by writing to the company and mentioning MARINE ENGINEERING.

Marine boilers of every type are illustrated and described in the pocket-size catalogue issued by the Kingsford Foundry and Machine Works, Oswego, N. Y. This company makes Scotch boilers with one, two and three furnaces, the improved Redfield marine boiler, the two-furnace Blake marine boiler, the two-furnace compact and the elipse marine boilers. These boilers are installed on many vessels. In connection with the new modern boiler plant of this company, there is an extensive machine shop and foundry for turning out marine engines of various styles. A copy of this and the large catalogue published by the Kingsford Works will be sent upon application.

Oil fuel is replacing coal in some departments of mechanic arts. The various uses for which this fuel may be applied is illustrated in the large Catalogue C issued by the Rockwell Engineering Company, 26 Cortlandt street, New York, under the title of "Furnaces." This company builds furnaces for every purpose; for annealing, for brass and copper, scrap metal, for rivet heating, hardening, wire baking, copper wire brazing, cloth singeing, and, in fact, every purpose for which a furnace is required. In all of these furnaces, this company's system of oil feed is used. The equipment of marine boilers with oil burners is at present being undertaken to a large extent by this company, and the boilers of several ships have been equipped with the Rockwell system of oil fuel supply.

When writing to advertisers please refer to MARINE ENGINEERING.

The Newport Engineering Works, Newport, R. I., has established a well-equipped machine shop in that city for general repair work on yachts, launches and automobiles. The various departments of this business are described in the catalogue issues by the company.

The direct current generators of the single field coil type manufactured by the Sprague Electric Company, 527 West 34th street, New York City, will be found thoroughly illustrated and described in Bulletin 101, which is now being distributed. The bulletin contains many large illustrations, including those of marine lighting sets.

An illustrated catalogue of pumps has just been published by Rumsey and Company, Ltd., Seneca Falls, N. Y. This catalogue is the fifty-third edition and embraces all kinds of hand and power pumps for every class of work from house and farm service to rotary centrifugal pumps for fire and power service. One compact style of pump made by this company is the triplex pump, in which the triple pump is driven through a series of gearing by an electrical motor. Steam and power driven pumps are also described.

Marine Apparatus, manufactured by the Holtzer-Cabot Electric Company, Brookline, Mass., is illustrated in Bulletin No. 133, just issued. A description is given of launch motors, switches, generating sets, igniters, etc. Igniters for gas engines have in the past given much trouble to the owners of launches propelled by gas engines. The Holtzer-Cabot Company describes its type of igniter and illustrates the proper method of wiring this instrument to batteries and the cylinder of an engine in Bulletin No. 1366 recently issued.

Crane Company's extensive line of valves, cocks and steam fittings of every assortment are described in detail in the 1902 book catalogue just issued by this company. The Crane Company, established in 1855 in Chicago, has branch offices in fourteen cities throughout the United States. The valves are well illustrated in this catalogue and the various sizes given in accompanying tables. Pipe fittings of cast and malleable iron and brass are also presented. Then follows a complete illustrated list of engine and boiler trimmings, steam packing, engineers' tools, etc. We presume that steam users may secure copies of this catalogue by writing to the company and mentioning MARINE ENGINEERING.

A block and truck catalogue, which has probably never been equaled in completeness and excellence, has been published by the Boston and Lockport Block Company, 160 Commercial street, Boston, Mass. It is bound in heavy board and comprises 136 pages. In addition to the regular line of blocks, trucks and other specialties of this company, it has a number of new features, including bushings, bronze yacht blocks, Tarbox metal snatch blocks and several other kinds of blocks for Manila and wire robe, Loud's nonchokable pumps, mallets, wharf and deck trucks of great variety, etc. A copy of this catalogue should be in every ship and yacht building establishment, as well as in the hands of anybody who has to do with the purchasing of blocks.

Pawling & Harnischfeger, Milwaukee, Wis., have issued Bulletin No. 7 in which are given many illustrations of the various kinds of electric traveling hoists which they manufacture. These hoists which are operated by electricity are used for hoisting material from one part of a warehouse or shop and transport it to any other part by means of an overhead runway. This runway consists of an I beam track which may be inexpensively built throughout a series of shops between whatever points the material is to be transported. Traveling electric hoists are a recent feature in the application of electricity, but there are enough of them in successful service to prevent them from being considered as experiments. Among the users of this make of electric hoists are many of the most prominent shops of the country, including the New York Ship Building Company.

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TRY SQUARES

GET THE BEST

They cost but little more and they can always be depended upon to be accurate if they are **Starrett** make.

No. 21 squares are of thin, polished steel, and lie flat on the work. Draughtsmen as well as machinists use them. Made in 2, 3, 4 and 6 in. sizes. Several other styles of Try Squares are shown in

Our CATALOGUE, No. 16L, of Fine Tools sent FREE

The L. S. Starrett Company
ATHOL, MASS.

Ship's Deck, Bilge, Triplex Power

PUMPS

We make
HAND AND POWER PUMPS
for all purposes.
Send for Catalogue.

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SALEM, OHIO.
HENION & HUBBELL,
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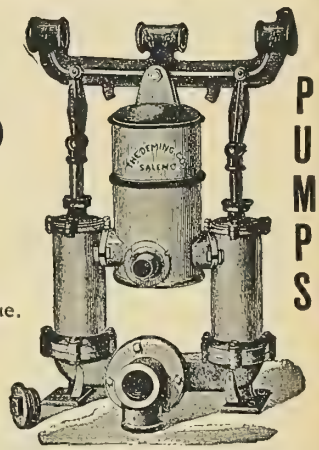
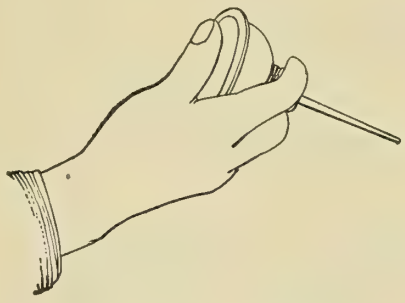


A three part catalogue of high artistic value has been issued by the Gas Engine and Power Company and Chas. L. Seabury and Company, Consolidated. The office and works are at Morris Heights, New York, and the downtown office is at 11 Broadway, New York City. In the first edition are illustrated steam yachts, launches and marine machinery, with handsome cuts of several of the famous steam yachts built by this company and cabin and deck views of them. The second division is profusely illustrated with views of the various classes of vessels at Morris Heights, viz.: steam yachts, torpedo boats, sailing yachts, cutters, tugboats, lighters, houseboats, etc. Naphtha launches and engines are handsomely illustrated in the third section. Here will be found cabin plans and views of naphtha launches of large and small sizes. To those interested in pleasure craft and small boats this very handsome catalogue will prove of great interest. Copies of it may be had upon application.



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You can use is

DIXON'S

Pure Flake

GRAPHITE

in an ordinary

SQUIRT CAN.

For valves and cylinders and all bearings there is nothing to equal Dixon's graphite. Sample free.

JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J.

Some large tools built by the Niles-Bement-Pond Company, 136 Liberty street, New York City, are handsomely illustrated and briefly described in the 24-page, pocket size circular issued by this company. The line illustrated covers the machines required in the equipment of a shipyard. The company states that it will be pleased to distribute this catalogue and give any information to those interested.

The Milwaukee Automobile Book is the title of a handsome 36-page book of automobile information issued by the Milwaukee Automobile Company, 19th street and St. Paul avenue, Milwaukee, Wis. The book is written to answer all sorts of automobile questions and treats of the automobile under the headings of "Sport of Kings," "Practical Side," "Is the Steam Machine Best?" and the "Milwaukee." The several styles of steam carriage made by this company are handsomely illustrated. This company also make a steam plant for launches.

How to Make a Tight Joint is told concisely in a neatly published booklet issued by the Merwarth Metallic Gasket Company, 120 Liberty street, New York City. Every user of steam will read this with much interest.

Acetylene Search Lights for vessels of all sizes and docks are treated in a leaflet issued by the American Acetylene Stove Company, 504 Masonic Temple, Minneapolis, Minn. This form of light is daily growing in popularity because of its intensity whereby the size and weight of the lamp may be greatly reduced.

The Davidson steam pump is handsomely illustrated and described in detail in a new 80-page catalogue just issued by M. T. Davidson, 43 Keap street, Brooklyn, New York. Pressure and boiler pumps, for medium and heavy service, circulating pumps, vertical cylinder pumps, which are especially adapted for marine purposes, compound pumps, twin cylinder marine air pumps, ash ejectors, etc., are well illustrated and described. The last pages of the catalogue are devoted to tables with general information for engineers. This catalogue can be had upon application by mentioning MARINE ENGINEERING.

The Hydro-Carbon system is described in an illustrated catalogue issued by the Steam Boiler Equipment Company, 20 West Houston street, New York. By the application of this system of induced draft to boilers, it is stated that the smoke nuisance has been prevented, the power increased and fuel saved. The system has been installed on both fire and water tube boilers, burning anthracite or butuminous coal, and can be readily equipped without change of fire chamber or setting. Several stationary plants, and the boilers of some large vessels, including the steam yacht *Niagara,* have the hydro-carbon system installed and the users have written strong letters of commendation. These points are covered in the catalogue.

Catalogue No. 5, 1902, issued by the Cleveland Punch and Shear Works Company, 156 Case avenue, Cleveland, Ohio, is one of the handsomest products of the printer's art that has come to our notice. It comprises 118 pages of illustrations and descriptions of the many styles of punches made by this company. The first pages are devoted to illustrating the detail of the jaws of the punches, and then follow cuts of single punches of many forms and styles. The double punch and shares made by this company, built with throats from 12 inches to 60 inches, are illustrated. Then follow horizontal punches, bending and straightening machines, malleable punches or gauge shears, bar shears, alligator shears, angle shears, splitting and bevel shears. Bending rolls from sizes driven by hand to the heaviest ones used in bending heavy plates are next taken up. Then are described angle bending rools, metal saws and plate planers of various types. Among these should be mentioned a rotary planer motor-driven, built in sizes up to 60 inches head, 24 feet bed and 20 feet cutting travel. The last pages are devoted to radial drills, hand spindle drills and other special heavy machines.

WALWORTH MFG. CO. TOOLS and SUPPLIES for STEAM WATER and GAS USERS BOSTON MASS.

Walworth Mfg. Co., 130-136 Federal St. BOSTON N. Y. Office, Park Row Bldg.

Specialty of **BRASS VALVES** and Fittings for Marine Construction

Extra Heavy Valves, Bent Pipe and Fittings for High Pressure Work

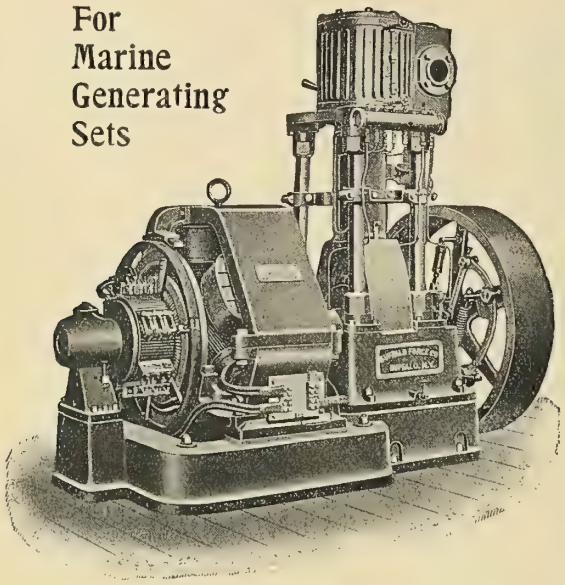
SOLE MANUFACTURERS OF **WALWORTH FLANGED—OVER PIPE JOINT**

Which does not Weep under heavy pressure

OUR BOOK CONTAINING "TABLES OF DIMENSIONS" OF WALWORTH GATE VALVES, FLANGED FITTINGS, FLANGED OVER PIPE JOINTS, WROUGHT IRON BENDS, ETC., should be in your draughting room.

Buffalo Marine Engines

For Marine Generating Sets



Buffalo Forge Company,

BUFFALO, N. Y.

NEW YORK OFFICE, 39 Cortlandt Street

WATER

Whether salt or fresh, tries paint more severely than the other elements; therefore ship builders use

ZINC WHITE

exclusively when white paint or tints are required for finishing their products. Marine work demands zinc white, because it is the only white pigment that will stand the service.

FREE : Our Practical Pamphlets
"The Paint Question"
"Paints in Architecture"

THE NEW JERSEY ZINC CO.
11 Broadway
New York

Every pattern maker and wood worker realizes the value of the quick acting vise. The patent quick-acting vises manufactured by Wyman & Gordon, Worcester, Mass., are illustrated in a leaflet published by the manufacturers.

A short story of Robert Fulton is published in a leaflet distributed by Wyman and Gordon, Worcester, Mass., manufacturers of forgings. A sketch is given of his interesting life and the question as to whether or not he was the inventor of the steamboat is touched upon.

The Aero-Painter, which is made by the Patton Paint Company, Milwaukee, Wis., is illustrated in a neat folder. This machine is claimed to be one of the first practical painting and whitewashing machines that has been made. It is equally adapted for exterior and interior painting. A pump placed in a pail of paint or whitewash sprays the liquid through holes over the surface to be coated.

Users of steam hammers will find what is probably the most complete catalogue on the subject ever issued in the one being distributed by Bement, Miles and Company, Philadelphia, Pa. It comprises 76 pages and is neatly bound in a cover printed in three colors, inculding a striking picture of a hammer in operation. The text is printed on heavy coated paper. The pages are 6 by 9 inches in size and a great many of the illustrations are full-page size. Almost every conceivable thing in the line of hammers is shown.

The Buffalo Forge Company, Buffalo, N. Y., manufacturers of the famous Buffalo forges, has just issued its new catalogue for distribution among the trade. It is a handy little book, pocket size, illustrated with half-tone engravings throughout, describing in detail not only the many different types and sizes of forges but includes a description of the Buffalo hand blower, power and hand drills, shears, bar cutters, etc. This handsome copy will be mailed to inquiring parties who mention MARINE ENGINEERING.

A unique invitation to "drop in" is sent to all inquirers by the Garvin Machine Company, Spring and Varick streets, New York City. Just how this is to be done and why is told in the invitation.

Hack-saw frames are well illustrated and described in a leaflet issued by the Union Hardware Company, Torrington, Conn. These instruments are required in every machine shop afloat and ashore. This company also makes a copper tipped hammer, the head of which is made of malleable iron into which the copper tips are fitted and held in position by a set screw.

The subject of force-feed lubrication is most excellently handled in a catalogue which is now being distributed by the Force Feed Lubricating Company, Milwaukee, Wis. The catalogue is very neatly printed in two colors and there are a large number of illustrations of this company's lubricators. It is stated on the face of the catalogue that a three months' trial is given free to any one who wishes to give one of these lubricators a test.

Direct Current Motors and Small Generators is the title of Bulletin 55 being distributed by the Rochester Electric Motor Company, Rochester, N. Y. It is neatly printed in two colors, and, among other features, has a neat picture of one of this company's dynamos direct connected to an Acme engine, making a small direct connected plant especially designed for yacht and other uses where a plant of small lighting capacity and compactness is desired.

The Telephone in an Electric Push Button is the terse description of the office telephone system controlled by the American Push Buttton Telephone Company, 463 Fifth avenue, New York City. The instrument is not much larger than the ordinary push button and contains a transmitter and receiver and a switchboard for connecting the various stations. This system has also been successfully used for communicating over long distances, a conversation having been carried on over these instruments from London to Paris.

The use of fuel oil is handled in an instructive manner in a booklet issued by the National Oil Burner and Equipment Company, Carleton Building, St. Louis, Mo. A special feature of this system as shown in the booklet is that the oil is fed to the furnaces automatically.

Keystone Hair Insulator is one of the products of the H. W. Johns-Manville Company, 100 William street, New York City, manufactured especially for refrigeration and cold storage use. A 20-page booklet is now being distributed by the company, giving a great deal of information regarding this insulation.

Launch owners and those of our readers interested in them will receive upon application a number of slips giving pictures and information regarding the launches manufactured by the Bridgeport Machine and Motor Company, Bridgeport, Conn., which has opend a much larger establishment at 91-111 Kossuth street.

Engineers and draftsmen who are contemplating buying drawing instruments and materials will do well to send for the catalogue issued by Schwencke, Kirk and Company, 26 Liberty street, New York City. In it will be found illustrations and price lists of the extensive line of domestic and imported goods carried by this company.

From a pair of pipe tongs to the finest of pipe threading machines driven by electric power, D. Saunders Sons, Yonkers, N. Y., make a great variety of tools for gas fitters and steam fitters. The firm's new illustrated catalogue contains many views and many pages of well-arranged descriptive matter. All the recent improvements in this line of machinery are carefully shown.

The air compressors, made by the Chicago Pneumatic Tool Company, Fisher Building, Chicago, Ill., are illustrated in a special Circular No. 22. Compressed air is rapidly superseding other forms of power in outside shipyard work, and the compressors here illustrated are well adapted for this service. This circular, and also a catalogue which is published by this company, will be sent upon request to those mentioning MARINE ENGINEERING.

Ventilators manufactured by the Buffalo Forge Company, Buffalo, N. Y., are illustrated in a new 16-page catalogue issued by this company describing in detail many different types and sizes of ventilators. The ventilators are built of heavy gauge iron and fulfil the somewhat hard requirements for convenient and desirable apparatus. The company has had a quarter of a century's experience of heating and ventilating buildings and ships.

The Garvin Machine Company, Spring and Varick streets, New York City, has published an attractive catalogue No. 2 concerning plain milling machines. The various styles and details of machines manufactured by this company are illustrated and described and dimensions given. The company invites all those interested in machine tools to inspect its large showroom and will be very glad to distribute catalogues and impart any further information concerning machines to those interested.

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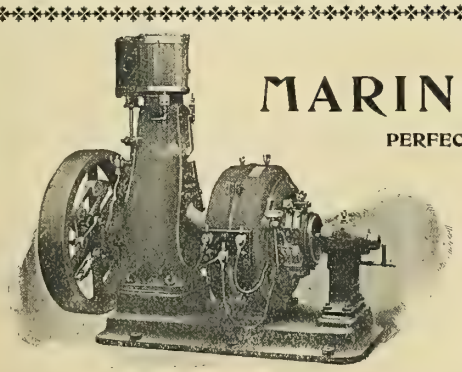
The enclosed arc lamps for alternating current manufactured by the Fort Wayne Electric Works, Fort Wayne, Ind., will be found fully described in Bulletin No. 1,023. Copies can be had upon application.

The several steam specialties manufactured by the American Steam Gauge and Valve Manufacturing Company, Boston, Mass., are unusually well illustrated and equally well described in a 12-page neatly published catalogue which is now being distributed. The several specialties, including pop safety valves of every type and gauges of all kinds.

Terse Tank Talks are given by S. F. Bowser & Company, Fort Wayne, Ind., in a 24-page booklet which is being distributed. The many varieties of oil tanks manufactured by this company are illustrated and there is a good deal of information regarding the care and economical use of lubricating and other oils which will be of much interest to our readers.

Alco-vapor Launches made by the Marine Engine and Machine Company, Harrison, N. J., are handsomely illustrated in the new catalogue issued by this company, which builds the hulls and engines for launches from the smallest size of yacht tenders to large cruising launches. The alco-vapor motor is entirely distinct from other marine motors in that wood alcohol vapor is used as the medium of transmitting power. This system is described in the catalogue.



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BUSINESS NOTES.

PHILADELPHIA PNEUMATIC TOOLS.—The new plant which the Philadelphia Pneumatic Tool Company has been completing at 21st street and Allegheny avenue, Philadelphia, Pa., is now completed and the company is installed in its new location. Only recently orders were placed for $10,000 worth of new machine tools, and most of these are now delivered, so that the company has ample facilities for giving prompt attention to orders for pneumatic chipping, calking and riveting hammers and other specialties. About 150 men will be employed in the new factory. The company is now placing on the market two new sizes of rotary drills, and it has perfected an improved riveting hammer which is being made in three sizes having capacities for from one-quarter of an inch to an inch and a quarter rivets. An order has just been received from one of the largest ship yards in the country for over 200 tools.

INCREASE OF BUSINESS.—To meet the demand of increasing business the Merwarth Metallic Gasket Company has removed from 107 Liberty street into larger quarters in the Beard Building at 120 Liberty street, New York City.

TECHNOLOGY IN CORRESPONDENCE SCHOOLS.—The managements of the American School of Correspondence, Boston, Mass., and the Armour Institute of Technology, Chicago, Ill., announce that they will co-operate in providing technical education by correspondence along the lines of, and in harmony with, the best laboratory and residence school methods. The faculties of the two schools are closely associated and the students in one school will be given credit for work in the other when desired. Dr. Frank W. Gunsaulus, president of the Armour Institute of Technology, is also the head of the Advisory Board of the American School. The correspondence school is doing a work which brings a better appreciation of the value of higher education to the masses.

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A PRESENT TO EVERY ONE WHO WRITES.—A handsome match box will be sent free to chief engineers and steamship owners who are interested in high grade metallic packing by A. W. France, Tacony, Philadelphia, Pa. Mr. France will also send a copy of his catalogue illustrating and describing his complete line of packings upon request. Inquirers are requested to mention MARINE ENGINEERING when writing.

WELDING FURNACE.—The oil welding furnace made by W. M. Simpson and Company, Old Colony Building, Chicago, Ill., is performing the most exacting work in this line. A large forging company which has forty of these machines in continual operation states that, although the class of work handled by the machines is of the most difficult character, they are able to rapidly turn out work with the welds that can neither be seen nor broken.

ELECTRIC KITCHEN EQUIPMENTS.—The Simplex Electrical Company, Cambridgeport, Mass., has placed on the market a complete line of electrical stove equipments. This includes ovens and stoves with attachments for connecting to an electrical circuit. The advantage of this system of cooking, whereby heat is used only when required and in the most economical manner, will be especially appreciated by the owners of electric launches, and smaller yachts where an electric plant is installed.

MARINE PAINTS.—George N. Gardiner & Son, 53 South street, New York City, inform us that the torpedo boat destroyer *Bainbridge* was recently given a semi-official trial trip and that the best speed she could make was 27 knots per hour. She was drydocked and coated by this firm with American-McInnes compositions and on her next trial trip made 28.6 knots per hour. They claim that this increase of speed of over a knot is directly due to the superior smooth and slippery surface which the McInnes coatings present to the action of the water, because the friction is reduced to a medium when the vessel is in motion. Another most important claim made for these compositions is that they protect the metal to a greater extent than many other coatings. The ferryboat *Newtown*, of the Nassau Ferry Company, which has been coated with this composition ever since she was built twenty-three years ago, was recently drydocked, and the superintendent of the ferry line, scraped down through the thick skin of the paint to the bare iron and reported that he found it in exactly the same condition as when the boat was first built; there had been no deterioration, no rust, and no pitting, and he declared that in his opinion the metal had never been wet, the American McInnes compositions forming a water-proof coating, and preventing all action of any kind. The Messrs. Gardiner have had similar experiences on two of the oldest ships of the Ward Line, and other steamers which have been coated for a great many years. These coatings are also very extensively used by the Navy Department.

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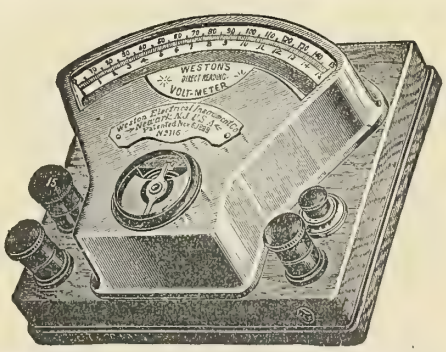

WESTON Standard Portable Direct Reading Voltmeter.

PRESSURE REGULATIONS.—The Foster Engineering Company, Newark, N. J., has furnished its combustion valve for nearly all the U. S. torpedo boats and destroyers. The pressure regulator, class W, built by this company will be used on the monitor *Cleveland* and cruisers *Florida* and *Des Moines*.

MODERN MARINE WORK.—The Marine Iron Works, Chicago, Ill., have recently completed or have under construction the following contracts: A large amount of machinery for the Tabasco-Chiapas Trading and Transportation Company; a stern wheel steamboat for the Zaragoza Mining Company, U. S. of Colombia; a pair of 9 by 36 inch stern wheel engines for Central America; a set of 12 24 by 72 inch horizontal, tandem, compound, condensing, stern wheel marine engines; a river steamer for Mexico; an 80-foot yacht for the St. Lawrence River, and several other orders for Europe and South America.

FALLS HOLLOW STAYBOLTS.—The Falls hollow staybolts manufactured by the Falls Hollow Staybolt Company, Cuyahoga Falls, Ohio, have been recently tested by the McGill University, Montreal, Canada. The tests show that the double refined charcoal staybolt iron which is used is of superior quality. The length of the specimen was 25⅜ inches, the mean outside diameter, 1.014 inch; the yielding point, 32,000 pounds per square inch; the ultimate tensile strength, 49,300 pounds; equivalent elongation in 8 inches, 31.2 per cent.; reduction of area, 45.7 per cent. The advantages of the hollow staybolt are being rapidly acknowledged by the marine boiler manufacturers. It not only adds to the combustion of fuel, but it has a double advantage for the detection of breakages should any occur; again, the strength is always uniform throughout the entire length of the bolt, no one point being weaker than another. Most of the users of this staybolt have the hole open next to the fire as well as the outer end, claiming that there is just enough air admitted through the sixteenth of an inch hole through the bolts to greatly aid the combustion of the fuel. This company also manufactures solid staybolt iron for those that prefer it.

SUPERINTENDENT OF PERTH AMBOY SHIP YARD.—Mr. Chas. Schofield, who has had extensive experience in the shipyards on both sides of the Atlantic, has taken the position of superintendent at the Perth Amboy Shipbuilding and Engineering Company, Perth Amboy, N. J. Mr. Schofield comes from a shipbuilding family. He was first apprenticed with the Earl Shipbuilding and Engineering Company, Hull, England, attending at the same time a course in an evening technical college. Completing his apprenticeship, he visited various yards in Scotland, and in 1880 came out to this country first working at the Detroit Dry Dock Company's Wyandotte (Mich.) yard, then with the King Bridge Company, of Cleveland, and next with F. W. Wheeler, of West Bay City, Mich. In these several positions he laid out and superintended work on many of the large ships building at that time on the Great Lakes. In 1891, Mr. Schofield became superintendent for the Bath Iron Works, and in later years he has been with the Harlan and Hollingsworth Company, William Cramp and Sons Ship and Engine Building Company and the Eastern Ship Building Company, in all of which companies he has been connected with the laying out of large work.

LAKE SERVICE RESUMED.—The Cleveland and Buffalo Transit Company, Cleveland, Ohio, announces that the service between Buffalo and Cleveland has been opened for the season by the steamers of this company. The boats leave Cleveland daily at 8 p. m.

NEW BRANCH OFFICES.—The Lozier Motor Company, Plattsburg, N. Y., announces that branch offices have been opened at No. 1 Broadway, New York City, and No. 20 Central street, Boston, Mass. A Lozier launch for demonstrating the applicability of the Lozier engines will be in service at one or more convenient localities at each of these cities and prospective purchasers will be given every opportunity to become acquainted with the workings of the launches.

The modern steam vessel contains such a mass of machinery that Professor Durand in his book, "Practical Marine Engineering," has devoted a chapter to the subject of

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Ash Ejectors,
General Arrangement of Machinery.

THE CHAPTER ON REFRIGERATION

has the following contents:

General Principles,
Refrigeration by Freezing Mixtures,
Refrigeration by Vaporization and Expansion,
Principal Features of Ammonia Refrigerating Apparatus,
Refrigeration by the Expansion of a Compressed Gas,
Principal Features of Compressed Air Refrigerating Apparatus,
Operation and Care of Refrigerating Machinery.

THE CHAPTER ON ELECTRICITY

is as follows:

Introductory,
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Wiring and the Distribution of Light and Power,
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The other equally as complete chapters are devoted to **Fuels, Boilers, Engines, Operation, Management and Repairs, Valves and Valve Gears, Indicators and Indicator Cards, etc.**

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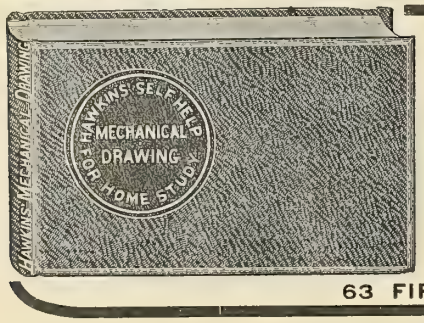

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D. & C. NAVIGATION COMPANY.—The Detroit and Cleveland Navigation Company announces that service between Cleveland, Detroit, Toledo and Mackinac has been resumed for the summer season of 1902. This company has published a very handsome 64-page folder describing and giving pictures of the fine new ships of the several lines and scenes along the shores of the lake.

CRANE'S NEW DRY DOCK.—Theodore A. Crane's Sons' new sectional drydock, composed of four sections, each 90 feet long and 60 feet wide, was recently placed in commission at the Erie Basin, Brooklyn, N. Y. It is located at the owners' shipyard in the angle of the breakwater. There are sixteen 14-inch pumps in each section, or sixty-four on a side, making 128 in all, which are capable of clearing the dock of water in twenty minutes.

ENLARGED OFFICES.—The Sprague Electric Company has found it necessary to move its Boston office into new and larger quarters to enable it to handle the increasing business in the New England district. The company has taken a suite of offices in the Weld Building, which is one of the most desirable office buildings in Boston. Mr. F. C. Farnsworth continues as manager of the Boston office and has recently added to his staff Mr. Geo. D. Simmons.

PERTH AMBOY SHIP YARD.—The Perth Amboy Ship Building and Engineering Company announces that, having acquired the plant and adjoining property of the late Hugh Ramsey at Perth Amboy, N. J., it is prepared to conduct a general ship building business, including the building and repairing of steel and iron vessels of all descriptions, the manufacture of marine engines, gasoline and kerosene engines, marine and stationary boilers, both water tube and cylindrical, and the building and installation of all classes of machinery. The New York office of the company is 90 Wall street.

WESTINGHOUSE STEAM TURBINES.—The Metropolitan Railway Company, of London, has contracted with the British Westinghouse Electric and Manufacturing Company, of Manchester, England, for Westinghouse steam turbines for the electric generating station about to be built for the former company. The Westinghouse Company is now filling a similar contract for the Metropolitan District Electric Traction Company, and, as there will be a general similarity in the two stations it will be easy to arrange for connecting the two and making them interchangeable as far as the supply of current is concerned. The Metropolitan power station will contain three sets of 3,500 kilowatts capacity each. The Chelsea station of the Metropolitan District Railway will contain four sets of 5,000 kilowatts each. The electrical machinery for both stations will also be supplied by the Westinghouse Company.

BUFFALO FORGE WORKS.—Among the many contracts recently awarded to the Buffalo Forge Company, Buffalo, N. Y., may be mentioned the equipment of the Pennsylvania Steel Company's forge shop with twenty Buffalo down-draft forges by means of which all smoke and gases are immediately and completely exhausted. This company has contracted with the Lake Shore and Michigan Southern Railroad for heating and ventilating the wood working mill and freight shops at Collingwood, Ohio. The Bowery Bay Building and Improvement Company, New York City, will be furnished with a 200 H. P. horizontal center crank engine for an electric lighting plant. This engine is of the same type as the one exhibited by the Buffalo Forge Company at the Omaha Exposition in 1898, which was bought by the Improvement Company. An order has also been placed with the Seaboard Realty Company, New York City, for six 120 H. P. engines and two 95 H. P. engines for an electric light plant.

SPECIAL NOTICES.

Announcements under this heading will be inserted at the uniform rate of thirty-three-and-a-third cents a line. Lines average ten words each.

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An outside position of a supervising nature in a moderate size shipyard wanted by a young shipbuilder with both yard and drafting office experience. Reply to "A. B. C.," care MARINE ENGINEERING.

MARITIME ASSOCIATION.—An organization meeting of the Board of Directors of the Maritime Association of the Port of New York as newly constituted, was recently held. Among the members for the standing committees for the ensuing years are: Messrs. Wallace Downey, Gustave A. Schwab and William P. Clyde.

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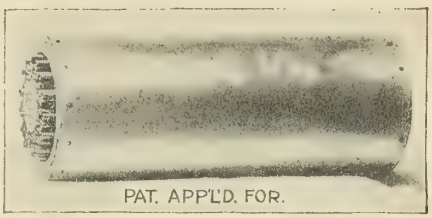

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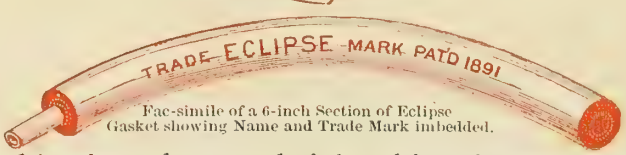

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" 77, Jos. P. Brewer, 206 N. Ninth St., Manitowoc, Wis.
" 78, F. A. Rehder, 29 W. Superior St., Duluth, Minn.
" 80, R. P. Cook, 46 Elm St., Albany, N. Y.
" 81, Jas. L. Sweeney, 204 E. Saragossa St., Pensacola, Fla.
" 82, Fred H. Gowell, 427 Middle St., Bath, Me.
" 84, Joseph F. Dumas, 403 Dauphin St., Mobile, Ala.
" 85, G. H. Miller, 412 Fifth St., Alpena, Mich.
" 86, Sherman A. Smith, 737 Menekannee Ave., Marinette, Wis.
" 87, Geo. B. Milne, 1003 Trumbull St., Detroit, Mich.
" 88, C. O. Chapman, S. B. Canal, Sturgeon Bay, Wis.
" 89, Robert Vallance, 69 Morris St., Ogdensburg, N. Y.
" 91, Robert Davidson, 17 Fairfield Ave., Harbor Sta., Ashtabula, O.
" 92, H. E. McArthur, Courier-Herald Bldg., 3d floor, Saginaw, W. S., Mich.
" 93, M. E. Davis, M. T. & S. Co., 929 D St., N. W., Washington, D. C.
" 94, George R. Jones, Box 222, Washington, D. C.
" 95, A. P. Jerguson, Box 198, Key West, Fla.
" 100, Jas. P. Lynch, Honolulu, H. I.
" 101, Thos. J. Hanlon, Box 765, Norfolk, Va.
" 102, Fred W. Linsemeyer, 210 Clinton St., So. Haven, Mich.
" 103, C. H. Hall, Box 512, New Berne, N. C.

TRADE PUBLICATIONS.

The Hardy Motor is a very compact gasoline engine. A description and illustration of its working parts is given in a 16-page catalogue issued by its manufacturers, the Hardy Motor Works, Port Huron, Mich.

A catalogue of the Hopkins gasoline engine, reversible propellers, and high-speed launches has been issued by the Noye Manufacturing Company, Buffalo, N. Y. Dimensions, prices, and illustrations are given.

Opinions on subjects are useful to those about to invest money in certain things. The opinions of some of the users of the motors made by the Buffalo Gasoline Motor Company, Buffalo, N. Y., are stated in a leaflet issued by this company, in which expressions of unqualified approval are given.

The A, B, C system of disc fan ventilation is described in catalogue No. 140, issued by the American Blower Company, of Detroit, Mich. Therein will be found illustrated descriptions of fans for the various requirements of ventilation and the details, construction, and different forms of improvement used; tables giving dimensions of fans and capacity, etc.

The Daimler Manufacturing Company, 939 Steinway avenue, Long Island City, New York, is selling many motors this season. The output of motors, launches, yachts, and automobiles is described in a handsome 28-page catalogue. These marine engines are used not only for propelling pleasure craft, but are being sold to oystermen and fishermen, who now can bring in their catches regardless of wind.

Victor boiler rivets are described in a booklet entitled "Scientific Facts and Other Valuable Information About Rivets." Therein are contained views of various types of boilers on which Victor rivets have been used, specimens of rivets which have been subjected to rivet tests, etc. It is shown that these rivets have stood remarkably well in the various types of boilers. The catalogue is issued by the Champion Rivet Company, of Cleveland, O.

The American Blower Company, Detroit, Mich., has recently issued sectional catalogue No. 139, which is very handsomely printed and of 70 pages. Therein are described the company's various systems of drying by moist air and hot blast. This catalogue will be specially valuable to those interested in kiln drying, as the different requirements for successfully operating dryers are taken up, as well as descriptions of the apparatus made by this company.

Motive-driven air compressors are being used more and more in several lines of service. Those manufactured by the Christiansen Engineering Company, Milwaukee, Wis., are described and illustrated in a handsomely printed catalogue. This company builds stationary compressors for continuous and intermittent service, and portable compressors for intermittent service and of various capacities. Transforming from electrical to pneumatic power is accomplished in a most efficient manner by these machines, the points claimed for them being their simplicity, interchangeability, durability, and compactness.

A complete catalogue, No. 10, has been issued by the Electric Launch Company, of Bayonne City, N. J., describing the launches and yachts recently built by the company, with a description of the well-equipped batteries, with table of storage charges for small boats, and an account of the high-class construction of the hulls. Then follows a description of the electric equipment, electric storage battery, views of electric launches, which are built on a fine model and handsomely finished, and plans of these boats of various sizes. The company also equips launches with gasoline engines, and in the catalogue will be found plans of yachts with auxiliary power. For generating electricity to supply the electric launches, the company supplies plants driven by kerosene, gasoline, and steam. This catalogue is one of the best that have come to our attention and will be of interest to all those contemplating buying motor boats.

When writing to advertisers please refer to MARINE ENGINEERING.

A pocket catalogue has just been issued by the Gere Launch and Engine Works, Grand Rapids, Mich., in which are given illustrated descriptions of the launches and gasoline marine engines manufactured by this company.

The Lee Injector Manufacturing Company, 99 Abbott street, Detroit, Mich., has just issued trade catalogue No. 5, in which are described injectors, ejectors, check valves, pipe strainers, etc., manufactured by the company. Tables of sizes and prices are given and also a concise article on the uses of ejectors.

The Salamandrine Boiler Company, 220 Broadway, New York, manufacturer of the Salamandrine boiler, has issued a catalogue describing this type of boiler, in which is shown the interior arrangement of the boiler. This boiler consists of a series of coiled tubes leading to a central vertical cylinder.

A large catalogue describing the gasoline and steam yachts and gasoline engines built by the Michigan Yacht and Power Company and Sintz Gas Engine Company, Consolidated, of Detroit, Mich., is now being distributed. Views are given of the several kinds of launches and marine engines, showing the working details and construction of machinery. Several handsome views are given of the latest launches built by this company in supplement No. 10.

The Caskey portable punch, which, before placing on the market, underwent the most severe and searching tests, is described in a handsome 16-page illustrated catalogue issued by the manufacturers, F. B. Slocomb and Company, Wilmington, Del. The catalogue states that the first Caskey machine punched upward of 90 per cent. of the holes in two torpedo boat destroyers, and since that time many machines have been sold on account of their merits.

Economy, durability, and beauty are the points claimed for the marine paints made by the Sherwin-Williams Company, whose offices are in Cleveland and other large cities throughout the United States. In a leather-bound catalogue, entitled "Paints for Marine Uses," are given samples of various colors for hull and cabin paint, enamel paint, deck paint, copper paint, etc. The catalogue is also handsomely illustrated with views of many well-known ships.

Lumen, the new bearing bronze, invented by Prof. R. C. Carpenter, of Cornell University, and manufactured by the Lumen Bearing Company, 1155 Sycamore street, Buffalo, N. Y., is described in a 16-page handsomely illustrated catalogue. It is stated that, owing to the many excellent qualities of this bearing metal, which, by the way, is not a babbitt, it is extensively replacing high-grade bronzes and machinery bearings of many kinds. The specific gravity of Lumen is 6.93; it weighs 4 ounces to the cubic inch; its average tensile strength is 30,000 pounds per square inch, the torsional strength 35,000 pounds per square inch, and the compressive strength 75,000 pounds per square inch. It is stated that its coefficient of friction under the same lubrication is lower than that of the best grades of phosphor bronze.

The Navigator or Mariner's Guide is the subject of a handsome trade publication of 150 pages published by the New Jersey Paint Works, of Jersey City, N. J. The work is well illustrated; first, with a color plate of pennants of the international code, and then with views of many prominent vessels. First is given a brief history of the American cup races, then an article on the hull and rigging of vessels. Then follow pictorial comparisons of the earliest and latest vessels of the different types, namely, river, sound, ocean, and harbor service. Space does not permit us to mention all the items of interest in this book, but some of them are the law of storms, management of boats, disturbances of the sea, notes on cargo and bills of lading, etc.; mathematics, including dead reckoning, longitude and latitude calculations, and pilot rules. To this reading matter are supplemented charts of the harbor of New York and contiguous waters in the Atlantic. This book will be sent upon receipt of 25 cents postage to those mentioning Marine Engineering.

AMONG THE FINE MECHANICAL TOOLS WHICH WE MANUFACTURE FOR THE USE OF ENGINEERS AND MACHINISTS

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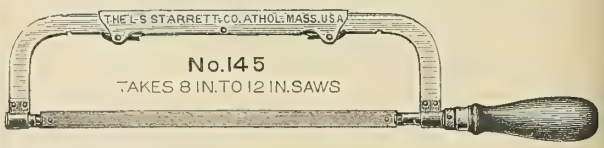
Hack Saws and Frames



FOR SAWING TUBING, BRASS, COPPER AND SHEET METAL.

These blades are made of the finest steel; the teeth are sharp and too hard to file.

Every Engineer should have them among his tools.

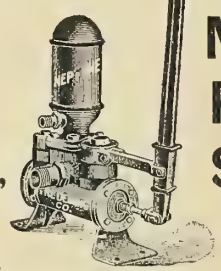
The L. S. Starrett Co., Athol, Mass.

A copy of our Catalogue No. 16 L can be had for the asking.

Ship's Deck Pumps,
Bilge Pumps,
Triplex Power Pumps.

PUMPS

We make
HAND AND
POWER PUMPS
for all purposes.
Send for Catalogue.

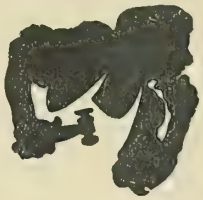


The Deming Company,
SALEM, OHIO.

HENION & HUBBELL,
Gen'l Western Agts., CHICAGO, ILL.

The Prophet Chamber is the title to "Four-Track Series" No. 15, issued by the New York Central Railroad. Therein are lists of many hotels and private houses upon the line of this railroad, the price of board and cost of transportation to and from New York. Copies can be had free from General Passenger Agent George H. Daniels.

Summer tours over the Cleveland and Buffalo Transit Company's lines, head offices Cleveland, O., are described in an interesting pamphlet issued this season. Herein will be found descriptions of the vessels, the route traversed by them, and the points reached, which include many famous summer resorts. There is also enclosed a list of the prices of tickets to the various points. The steamers leave Buffalo daily at 6 P.M. for Cleveland, and leave Cleveland at 8 P.M. for Buffalo. During July and August an extra trip is made on Saturday each way.



THE reason Dixon's Pot-Lead is the best treatment for the hulls of yachts, launches and other fast craft is because of its perfect smoothness. It offers less friction to the water, and every bit of friction means loss of speed. We have had seventy-five years of experience in the manufacture of graphite products. Our Pot-Lead, like our other products, is the best form of graphite for its purpose. Send for circulars.

JOSEPH DIXON CRUCIBLE COMPANY,
JERSEY CITY.

The cotton jacket for a rubber hose is mentioned in a leaflet issued by the Boston Belting Company, 256 Devonshire street, Boston, Mass. This is a seamless fabric woven directly over the hose, thereby greatly increasing the life and strength of the hose. The merits claimed for this Universal Cotton Jacket are that it neither kinks, bends out of shape, nor unwinds should a strand be broken.

Shipyard Machinery For Sale.

One 7-roll plate straightener, 68 inches between housings. Two Baird portable pneumatic compression riveters, 42 inches and 18 inches gap respectively.

CHICAGO SHIP BUILDING CO.,
East Side Station, Chicago.

Bausch and Lomb Plastigmat f-68 is the name of a new lens made by The Bausch and Lomb Optical Company, Rochester, N. Y. There are several qualities claimed for this lens that are not possessed by others.

The line of vertical milling machines manufactured by the Garvin Machine Company, Spring and Varick streets, New York, are described in catalogue No. 3, just issued. The catalogue also describes the new profiling machines and duplex milling machines made by this company.

Compressed air is finding many new uses, but none appear more interesting than those described in Catalogue A, recently issued by the American Compressed Air Company, of Milwaukee, Wis. The machines made are for use in cleaning carpets and upholstery in hotels or on shipboard.

Any one interested in machine shops should write for Catalogue E on engine lathes manufactured by Shoemaker and Boye, of Cincinnati, O. Views are given of the standard lathes, with and without turrets, and various other lathes up to 42 inches swing. A new device for feed and screw cutting has been applied to this machine.

The Industrial Press, New York city, has just issued Section A of the Mechanical Index, comprising machine tools, metal-working machinery, and accessories. Therein is contained, in alphabetical index, a list of all classes of machines and accessories and lists of makers of each. The first 40 pages are devoted to an index, in English, German, and Spanish, of tools and appliances.

The gasoline engines and launches manufactured by Palmer Bros., Cos Cob, Conn., have a very neat catalogue devoted to them, which is now being distributed. The catalogue is 5 by 7 inches in size and comprises 32 pages. It is neatly printed and contains a great deal of information regarding the various styles of gas engines, launch hulls and other specialties of this company. Probably a copy can be had free of charge by referring to MARINE ENGINEERING.

The Rideau lakes, river, and canal lead to a unique region comparatively unknown, but which affords a most interesting trip for the summer tourist. These waters form an inland waterway between the St. Lawrence River at Kingston and the Ottawa River at Ottawa, and are briefly described in No. 34 of the Four-Track Series. A copy will be mailed free on receipt of two cents postage by George H. Daniels, General Passenger Agent, Grand Central Station, New York.

A well-illustrated catalogue describing the small electric motors made by the Crocker-Wheeler Company, with main offices and works at Amphere, N. J., is now being circulated. For many years this company has devoted its attention to the manufacture of small motors as well as large machines. These motors are made in large quantities, with either 2 or 4 poles and from one-twenty-fifth to 35 horse power. They are used in automobile and machine shops and other services where small power is required.

WATCH THIS SPACE FOR OUR NUMEROUS SPECIALTIES.

WALWORTH MFG. CO. TOOLS and SUPPLIES for STEAM WATER and GAS USERS BOSTON MASS.

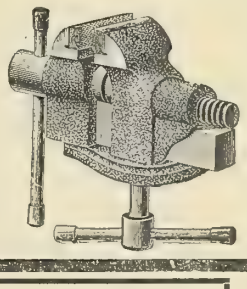
Walworth Extra Heavy Bench Pipe Vise

Is made especially for use in

MARINE REPAIR SHOPS AFLOAT AND ASHORE.

Grips pipe 1 by reason 8 to 6 inches inclusive, and of its solid and substantial "make up," also furnishes a first-class tool for general machine work.

Will not Crush or Jam Pipe Like Ordinary Vises



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New York, Park Row Building. **WALWORTH MFC. CO.,** Boston, 128 Federal Street.
Write for our BLUE CATALOGUE "D." showing complete line of engineers' pipe fitting tools.

BUFFALO STEEL PLATE FANS

HEATING, VENTILATING AND FORCED DRAFT

SPECIAL DESIGNS BUILT FOR ALL REQUIREMENTS

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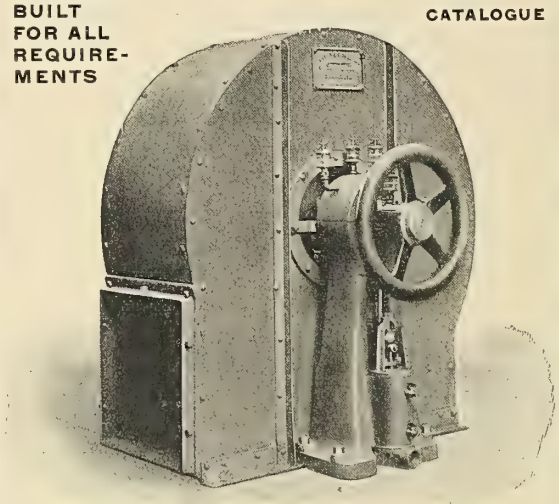

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BUFFALO, N. Y., U. S. A.

SHIPBUILDERS

Generally know that the only white pigment that will stand marine exposure is

ZINC WHITE

If there be any who are not aware of the fact, it will pay them to learn it.

THE NEW JERSEY ZINC CO.

11 BROADWAY :: NEW YORK

FREE: Our Practical Pamphlets

"The Paint Question," "Paints in Architecture," "House Paints: A Common Sense Talk About Them," "French Government Decrees."

A table of standard, lap-welded boiler tubes is issued by the United States Tube Company, of Buffalo, N. Y. This is a useful table to engineers and boiler makers.

In Catalogue No. 5 the American Steel and Wire Company, Chicago, Ill., describes the various kinds of extension, compression, torsion, and flat springs, valve springs, upholstery springs, etc., which it manufactures.

A Short Story of George Stephenson is the topic of a leaflet issued by Wyman and Gordon, Worcester, Mass. The company has issued a series of biographical sketches of prominent mechanical engineers, and will distribute them to those interested who mention MARINE ENGINEERING.

Volute photographic shutters, made by the Bausch and Lomb Optical Co., Rochester, N. Y., are attractively described in a 16-page catalogue issued by the company, in which are illustrations showing the manufacture of the shutter and the results obtained by instantaneous photography.

The economical handling of coal is receiving the attention of engineers and large suppliers of power throughout the country, and some notable examples of this class of machinery, made by the C. W. Hunt Company, 45 Broadway, New York, are described in catalogue No. 028, recently issued.

A catalogue of the parts of "Wood" arc dynamos, made by the Fort Wayne Electric Works, Fort Wayne, Ind., appears in an 84-page, 6½ by 4½ inches, catalogue recently issued. The catalogue embraces the prices of the various parts, each of which is enumerated, together with an index.

In the present day of improved office fittings the mechanical accountant holds a strong position where much figuring is to be done. The machine, which is made by the Mechanical Accountant Company, 184 Eddy street, Providence, R. I., is described in a leaflet recently issued. In Model B the machine can be made to add, subtract, multiply, divide, compute interest, and extract square and cube root by simply pressing the keys.

Instructions for installing Type A oil transformers are given by the manufacturers, the Fort Wayne Electric Works, Fort Wayne, Ind., in leaflet No. 3,008.

A brief sketch of the life of James Nasmyth, the inventor of the steam hammer, is given in a leaflet issued by Wyman and Gordon, Worcester, Mass., makers of drop forgings.

Ask Hopkins is the title of a leaflet issued by John C. Hopkins and Company, 119 Chambers street, New York City, dealers in canvas and duck and marine supplies. The company states that it is ready to answer all questions concerning sails, awnings, flags and tents, etc.

BUSINESS NOTES.

LAUNCHING THE LAWSON.—It has been decided to rig the seven-masted schooner *Thomas W. Lawson* before she is launched from the Fore River Shipyard at Quincy, Mass. Each of the steel masts weighs 17 tons without rigging.

FIELD GLASSES.—The Warner and Swasey Company, Cleveland, O., manufacturer of the new prism field glasses, is selling many of the new instruments, among the orders being a number of larger instruments sufficient to allot two to each battleship and cruiser of the U. S. Navy. The glass was chosen after a thorough comparative test by the experts of the Navy Department.

EXHAUST MUFFLERS.—The Loomis Automobile Company, Westfield, Mass., makes an exhaust muffler for deadening the sound of loud explosions in the exhaust of gasoline engines. The muffler is made of aluminum and asbestos, both of which materials, being dead, do not vibrate, and the muffler is so designed that the exhaust enters the atmosphere in a steady stream. Many users of this device have written to the manufacturers expressing their satisfaction.

Q and C Specialties.—The Q and C Company has again resumed operations and is devoting itself to a line of specialties of much interest to ship and engine builders. These specialties comprise pneumatic tools, including yoke and hand riveters, drills, hammers, etc., metal-sawing machines, shop saws of various kinds, etc. The principal offices of the company are in the Western Union Building, Chicago. The New York office is at 114-118 Liberty street.

A Free 300-Page Catalogue.—Messrs. Charles H. Besly and Company, 10-12 North Canal street, Chicago, Ill., report their business very good. They are receiving orders for Gardner grinders from all parts of the country. Within the past month shipments have been made to California, New York, Rhode Island, Connecticut, and New Jersey. The spiral circles in their various forms used in connection with spiral-grooved steel disc, which is the distinctive feature of the Gardner grinder, and, it is claimed, enables users of this grinder to do from 50 per cent. to 300 per cent. more work than either solid or coated wheel will do. Many shipments of Helmet oil, Badger and Bonanza grease cups are being made to all parts of the country. Numerous inquiries for catalogues and circular matter relating to their own specialties, as well as requests for general catalogues, estimates and prices on shop equipments, indicate a healthy condition of trade throughout the country. Their new 300-page illustrated catalogue will be sent free to any address upon application.

A New Submarine Paint.—A new anti-fouling paint has recently been put on the market by the Walker Chemical Works, of Harrison, N. J., and 52 Broadway, New York. This paint is a new departure in the field and is claimed to be entirely different from any other anti-fouling paint manufactured. It consists of a pyroxylin varnish, the guncotton solvent used being a special product of wood distillation. Its creosote origin is claimed to render it absolutely anti-fouling and poisonous to all animal and vegetable life. Before putting it on the market the manufacturers have subjected this compound to severe tests in waters of this latitude, and they report that their experiments prove that this paint will remain in practically an unchanged condition for a year; that it is not subject to the attacks of the teredo, and that neither oysters, barnacles, nor vegetable growths can get hold on its surface or live in its presence. In its natural condition this varnish is a transparent, almost colorless liquid, which can be made of any consistency desired by varying the amount of guncotton used. It dries flat and perfectly smooth, forming a waterproof celluloid surface where applied. For wooden surfaces the company furnishes metallic copper bronze, which is stirred in the pyroxylin varnish just before application, about a pound and a half being used to a gallon of the medium. It is then flowed on with a brush and the result is a bright, metallic, waterproof surface. The varnish can also be used with any other metallic powders, graphite, or bronzes not subject to corrosion by salt water.

For Steam Making Apparatus
For Refrigerating

MECHANICAL THERMOMETERS

HOHMANN & MAURER MFG. CO.
TRADE H&M MARK
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For All Engineering and Manufacturing Purposes

Write for Illustrated Catalogue M

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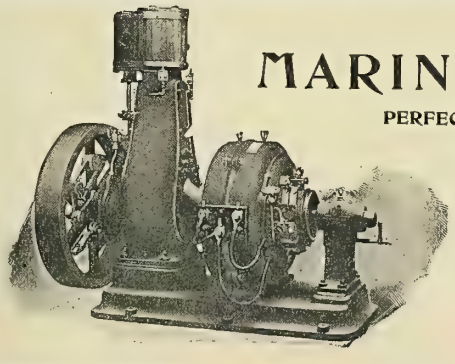
Moved to Larger Quarters.—The Edson Manufacturing Company has removed to large and ample quarters in the fine new building at 255 and 257 Atlantic avenue, Boston, Mass. With these increased facilities the company will be able to carry a larger stock of its many marine specialties, as both its manufacturing and stock-carrying facilities are more than double.

Philadelphia Pneumatic Tools.—The Philadelphia Pneumatic Tool Company is now entirely settled in its new shops at Twenty-first street and Allegheny avenue, Philadelphia. Considerable loss of time naturally resulted from moving, and the company reports being somewhat behind in making shipments. The works are being run night and day, however, to catch up, and orders will be filled with usual promptness at no distant date. A great deal of attention is being attracted to the Keller pneumatic hammers, made by this company, by reason of a recently devised improvement in their construction. On account of this improvement the working capacity of the chipping and riveting hammers is claimed to have been increased at least 25 per cent., and the vibration, inseparable from any pneumatic tool, is reduced materially. This applies to both chipping and riveting hammers. Recent large orders have been received from the Southern Pacific Company, Newport News Shipbuilding and Dry-Dock Company, Pennsylvania Railroad Company, Lackawanna Steel Company, and others.



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PERFECT SERVICE. LEAST SPACE, WEIGHT AND ATTENTION.

The design and construction of our apparatus are based on scientific principles resulting in unusually high efficiency and remarkable endurance under the most exacting conditions of service, and giving the best possible commercial value. Send for Bulletin No. 10115.

SPRAGUE ELECTRIC COMPANY

General Offices: 527-531 West 34th St., New York

Chicago: Fisher Bldg. Boston: Weld Bldg. St. Louis: Security Bldg. Baltimore: Maryland Trust Bldg.

A MARINE PUZZLE FREE.—Berry Bros., Ltd., Detroit, Mich., who manufacture the well-known Berry Bros. spar varnish, will send to all inquirers who mention MARINE ENGINEERING, free of charge, a unique marine puzzle.

MARCK STEAM TRAPS.—E. F. Houghton and Company, 240-250 West Somerset street, Philadelphia, Pa., are distributing a circular devoted to the Marck steam trap. This circular contains a cut showing the manner of draining the low-pressure cylinder on a marine engine. There is also a picture showing the application of these traps to steam pumps, steam winches, steam cranes, etc.

CONSULTING ENGINEER.—William T. Keough, consulting engineer and naval architect, has removed to offices in the Whittier Building, 15 Exchange street, Boston, Mass. Mr. Keough makes a specialty of designing and superintending the construction of vessels and marine machinery of all kinds. He also makes examinations, surveys, and reports, and attends to other matters in the line of consulting and constructing in marine work.

FREE SAMPLE OF METAL POLISH.—George W. Hoffman, 295 East Washington street, Indianapolis, Ind., in order to still further introduce the U. S. metal polish, offers to send a free sample to any reader of MARINE ENGINEERING who will write for it.

NEW STEAMBOAT.—Messrs. Sinn and Page, naval architects and marine engineers, Baltimore, Md., have launched on Lake Sunapee, N. H., a new vessel for the Woodsum Steamboat Company. The hull was built by the Baltimore Dry-Dock Company and shipped in cars to the lake. The engines were built by J. H. Paine and Son, Boston, Mass.

WOLVERINE MOTORS.—The Wolverine Motor Company, Grand Rapids, Mich., has found it necessary to have a large stock of motors constantly on hand in New York, so a fine store has been opened at 25 Warren street, which will be in charge of C. L. Snyder, president of the company. Any information regarding motors and boats can be had at this office, as well as at the main office in Grand Rapids.

"BENEDICT-NICKEL" Seamless Condenser Tubes are the only tubes that are *not* readily effected by Electrolysis.

"Benedict-Nickel" is an alloy of nickel and copper. The tubing is stronger, tougher and denser than any other. By hot rolling a solid cylindrical billet upon a forming mandrel, it is made like a twist gun barrel.

Send for treatise, "Electrolysis of Condenser Tubes," which gives full scientific reasons for the superiority of "Benedict-Nickel."

We are also large manufacturers of brass and copper tubing, made by the same process as "Benedict-Nickel," and of brass and copper sheets, wire, etc.

BENEDICT & BURNHAM MFG. CO.,
Main Office and Factory, Waterbury Conn.
New York, 253 Broadway. Boston, 172 High Street.

V. WARING, N.Y.

FREE!! GIVEN TO all ENGINEERS SENDING US A TRIAL ORDER

A bound book on Engineering, valued at $1.50. We are sole agents for the best line of Asbestos Packings on earth. Including Sheeting, Piston, and Gaskets

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170 Summer St., Boston
Agents for
TURNER BROS., ROCHDALE, ENGLAND

GASKET WISDOM

Advises the adoption of the

McKIM GASKET

wherever long service with no worry is wanted.
Made of packing encased in soft annealed copper.
Can be reapplied indefinitely.
All sizes for manhole, hand-hole and pipe fittings.
Write for prices and catalog.

McCORD & COMPANY

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1471 OLD COLONY BLDG. - CHICAGO

RAPID BLUE-PRINT PAPER.—The popularity of the "Rapid" blue-print paper, manufactured by the Pittsburg Blue Print Company, Park Building, Pittsburg, Pa., is shown by the fact that over 50,000 yards of this paper were sold during the month of May.

CLEVELAND PNEUMATIC TOOLS.—Owing to a great increase in trade on the Pacific coast, the Cleveland Pneumatic Tool Company, Cleveland, O., has established an agency on the Pacific coast, having given this appointment to the Compressed Air Machinery Company of San Francisco. A full line of Cleveland tools will be kept in stock.

MOTOR-DRIVEN MACHINES.—The Sprague Electric Company, 527 West Thirty-fourth street, New York City, continues to have a large demand for electric motors for use in direct connection to machinery and tools of various kinds. One of the latest orders filled was that of equipping the plant of the U. S. Playing Card Company, Cincinnati, O., where all of the machines will be operated by Sprague electric motors.

HUNTER'S POINT DRY-DOCK.—The Hunter's Point Dry-Dock, San Francisco, Cal., which is being enlarged, has been equipped by the following San Francisco parties: C. C. Moore and Company furnished the boilers; W. T. Garret and Company, the pumps; J. J. Beaton is the superintendent; H. C. Holmes is chief engineer of construction; and J. Hubacher is the chief engineer for the dry-dock company. Oil is burned under the boilers.

EDUCATED BY CORRESPONDENCE.—Among the recent graduates of the American School of Correspondence, Boston, Mass., were Frank B. Fuller, Swampscott, Mass., who completed the marine engineering course in sixteen months, and Ray O. Caukin, Jackson, Cal., who completed the electrical engineering course in the same time. Mr. Fuller is employed by the Boston and Maine Railroad Company, and Mr. Caukin by the Standard Electric Company of California. The record of another graduate, Mathias Knopf, of Newark, N. J., who completed the stationary engineering course while working as a fireman, shows what an ambitious man can do when he determines to gain a technical education. At the time he enrolled Mr. Knopf was not at all familiar with the English language. This delayed him somewhat on the earlier papers, yet he made rapid progress. J. A. Gonstead, an engineer in the Minneapolis, Minn., fire department, devoted spare time to the electrical engineering course and completed it, also a course in mechanical drawing, in sixteen months. Another recent graduate in electrical engineering was George E. Higgins, superintendent of the Montreal agency of the Bell Telephone Company. Among foreign students who recently received their diplomas were Frank W. Burford, Timaru, N. Z., and Arthur E. Moss, Port Chambers, N. Z. It is interesting to note that the average age of these men when they became students in the American School was thirty years, the youngest being twenty-three and the oldest thirty-five, and that they were regularly employed in some trade or profession while pursuing their studies.

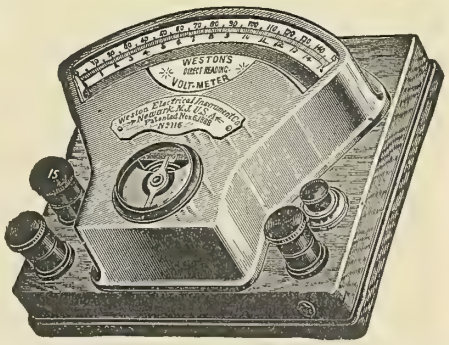
WESTON STANDARD PORTABLE DIRECT-READING

Voltmeters, Ammeters, Millivoltmeters, Voltammeters, Milliammeters, Ohmmeters, Portable Galvanometers, Ground Detectors and Circuit Testers.

Our Portable Instruments are recognized as **the standard** the world over. Our **Voltmeters** and **Ammeters** are unsurpassed in point of extreme accuracy and lowest consumption of energy.

WESTON ELECTRICAL INSTRUMENT CO.,
Waverly Park, Newark, N. J., U. S. A.

BERLIN:—European Western Electrical Instrument Co., Ritterstrasse 88.
LONDON:—Elliott Bros., 101 St. Martin's Lane.



WESTON Standard Portable Direct Reading Voltmeter.

NEVER-STICK BLOW-OFF VALVE.—The Walworth Manufacturing Company, Boston, Mass., reports a very large trade in Never-Stick boiler blow-off valves. The particular features of this valve are briefly summed up as follows in a circular: The head of the plug has a firm bearing against the locking ring. The plug is adjustable and the valve need not leak. It has a large taper and cannot wedge or bind. The pressure on the plug does not destroy the packing. The working parts are protected and safe from severe wear. The port is inside the plug and cannot be injured by cutting with scale. The valve is thoroughly made, for high or low pressure, and is always tight and ready for use, or after long service can be made so with little trouble. It is now in use in several important steam vessels, and is fully proving that the broad claims made for it are well grounded. This valve is also made in straight pattern, where high-grade, quick-opening, serviceable valves or cocks are desired, extra heavy or standard weight; flanged or screwed.

COTTON JACKET FOR HOSE.—The Boston Belting Company, 256 Devonshire street, Boston, Mass., is now prepared to supply rubber hose with Universal Cotton Jacket. This is a heavy seamless fabric, woven directly over rubber hose. Its use greatly increases the strength of the hose to which it is applied and also adds much to its capacity to withstand the wear and tear of being dragged about. The jacket is painted, thus rendering it waterproof. It does not kink or get out of shape, and does not unwind should a single strand be cut. These, and the other claims for this jacket, will be much appreciated by users of hose, whether for air, water, or steam.

A $10 BARGAIN

We have on hand only a few sets of MARINE ENGINEERING, as follows:

1899, Vols. III–IV; 1900, Vol. V;
1901, Vol. VI;

bound in black cloth with leather corners and back.

The price for the set is $10.00.

The price per volume is **$4.00.**

Floor space in offices on Broadway costs so much that we shall not attempt to keep complete volumes or back numbers of the magazine any longer, and while the sets last we will sell them for **$10** complete, carriage to be paid by the purchaser. No reduction in price for single volumes.

The period 1899–1901 marks a turning point in the history of shipbuilding in this country, hence these volumes are of great historic as well as technical value.

MARINE ENGINEERING

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The modern steam vessel contains such a mass of machinery that Professor Durand in his book, "Practical Marine Engineering," has devoted a chapter to the subject of

AUXILIARIES

The contents of this chapter are as follows:

Circulating Pumps,
Condensers,
Air Pumps,
Feed Pumps and Injectors,
Feed Heaters,
Filters,
Evaporators,
Direct Acting Pumps,
Blowers or Fans,
Separators,
Ash Ejectors,
General Arrangement of Machinery.

THE CHAPTER ON REFRIGERATION

has the following contents:

General Principles,
Refrigeration by Freezing Mixtures,
Refrigeration by Vaporization and Expansion,
Principal Features of Ammonia Refrigerating Apparatus,
Refrigeration by the Expansion of a Compressed Gas,
Principal Features of Compressed Air Refrigerating Apparatus,
Operation and Care of Refrigerating Machinery.

THE CHAPTER ON ELECTRICITY

is as follows:

Introductory,
The Dynamo,
Wiring and the Distribution of Light and Power,
Lamps,
Operation and Care of Electrical Machinery,
Routine Care,
Faults.

The other equally as complete chapters are devoted to **Fuels, Boilers, Engines, Operation, Management and Repairs, Valves and Valve Gears, Indicators and Indicator Cards, etc.**

The book comprises over 700 pages and has nearly 400 illustrations.

PRICE OF THE BOOK $5.00

Delivery free of carriage to any part of the world.

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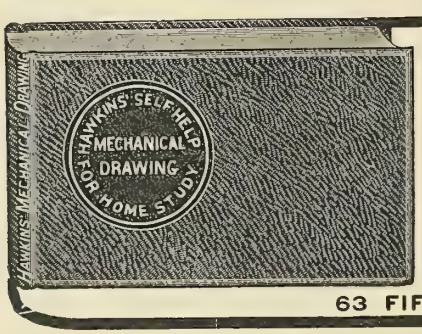

Learn to Draw. This book, as shown in illustration is a self-instructor for home study and practice in the art of Mechanical Drawing for Engineers, Machinists, Electricians, Metal Workers and all interested in Drafting for shop practice, and has been prepared in plain practical language, and illustrated, by the author of "Hawkins' Educational Works." The book is divided into 28 different subjects which comprise the fundamental principles of drawing, each heading being thoroughly treated. There are 320 pages, 300 illustrations and diagrams. The book is handsomely bound in green cloth, gold edges and titles, size 7 x 10½ in., printed on fine paper. Upon receipt of $2 the book will be sent to any address prepaid, money returned if not as represented, order to-day; see order coupon.

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Order Coupon. Cut Out.

Date 1902

Enclosed fina Two Dollars for which ship me at once one copy of Hawkins' Mechanical Drawing.

Name.....

Address.....

NEW PRESIDENT ELECTED.—The directors of the American Screw Company, Providence, R. I., have chosen Samuel M. Nicholson as the executive head of the company. Mr. Nicholson is president and general manager of the Nicholson File Company, probably the largest file and rasp concern in the world, which controls six large plants with home offices at Providence, R. I.

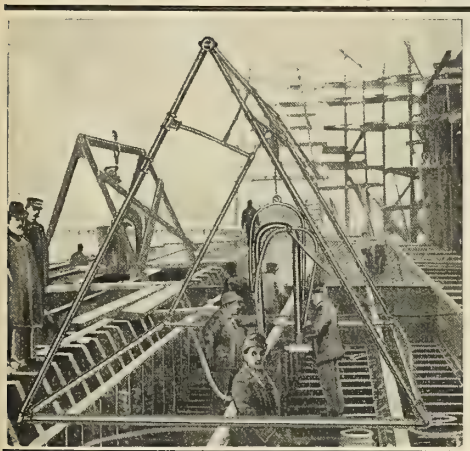
COMPACT LAUNCH BOILER.—The Salamandrine Boiler Company, 220 Broadway, New York, manufactures a very compact water-tube boiler, in all sizes up to 50 horse power, which is designed especially for use in yachts and launches. The boilers are so constructed that they can be used with coal or any form of petroleum for fuel. The heating surface of the 6 horse power boiler is given as 60 feet and of other sizes of boilers in proportion.

LOSS IN HANDLING OIL.—In a booklet issued by F. S. Bowser and Company, Incorporated, Fort Wayne, Ind., a great deal of information is given regarding the Bowser oil tanks. These tanks are described as a positive economy, as they save oil, money, time, and labor. They pump gallons, half-gallons, and quarts at a stroke. They are neat, clean, handy, and enforce economy whether the users of it wish to or not. The booklet says that the loss of a gallon of oil is not serious, yet it is the equivalent to losing the interest on a dollar for a year. Users of oil will read the booklet with much interest.

A COMPACT PAINTING MACHINE.—The Patton Paint Company, Milwaukee, Wis., reports that it is selling a great many of its painting machines. This is a compact device operated by hand, equally adapted for exterior and interior painting. The entire machine weighs only twenty-five pounds, and one man can handle it and with twenty-five feet of hose and a 7-foot nozzle pipe can paint almost anything. The claim is made that this machine does not use any more paint than when paint is applied by the brush, and that two men will average 20,000 square feet of surface a day, ten times as much as one man can paint in a day with a brush, using the same amount of paint per square foot. Circulars regarding this machine are issued by the manufacturers.

A FINE LAUNCH.—Mr. Philo E. Remington, president of the Remington Automobile and Motor Company, Utica, N. Y., writes of an interesting trip which he made last month in a Remington launch. He states that on June 14 he left Albany in a 26-foot Remington launch, equipped with one of their four-cycle motors, for the purpose of making a record trip from Albany to New York. The time of leaving Albany was 3:30 A.M., which time is certified to, and the time of arrival at 152d street, North River, New York, was 6:30 P.M. the same day, which arrival is likewise certified to. Mr. Remington reports that the motor never stopped once during its entire trip, thus having run continuously for fifteen hours during the entire distance of 150 miles. The company has recently made a gasoline consumption test of that same boat, with the result that twenty gallons of gasoline were used in traveling 325 miles.

MARINE PAINT ECONOMY.—The Sherwin-Williams Company, Cleveland, Ohio, issues a neat booklet entitled "Marine Paint Economy," which states: Real economy in vessel painting comes through good quality paints. Good quality means greater durability and greater spreading capacity. It means fewer times of repainting and fewer gallons of paint. In the grinding and mixing we exercise the closest watch-care. Everything is exact and accurate. There's no chance for mistakes. The finished product must pass through the practical test room before it is allowed to be sealed in the cans. Its working qualities, drying qualities, color, etc., are thoroughly examined. In filling we are guided by weight as well as measure. The company operates four large plants at Cleveland, Chicago, Newark, and Montreal, and maintains warehouses and offices at New York City, Boston, San Francisco, Kansas City, Toronto, Los Angeles, and Minneapolis. Readers are asked to write for the catalogue of marine paints.



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MOST ECONOMICAL AND EFFECTIVE METHOD OF RIVETING

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THE Q & C COMPANY

114 LIBERTY STREET, NEW YORK
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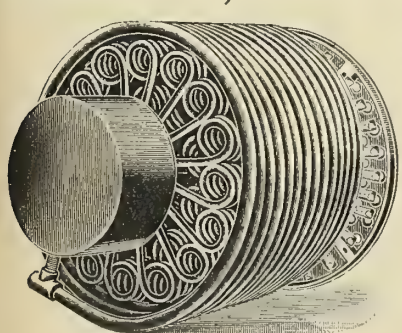


*PATENT PENDING.

The continuous use of Salamandrine Boilers by our numerous customers shows such wonderful efficiency as positively to put in the shade all other existing types of steam boilers.

From being a nuisance when equipped with ordinary boilers, steam craft now employing the Salamandrine afford pleasure and the highest satisfaction.

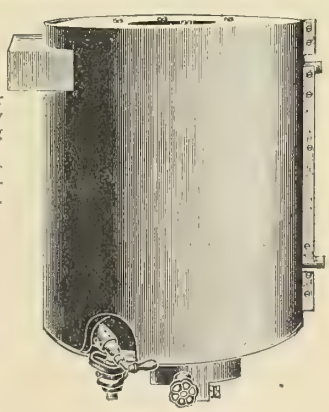
SOME OF OUR FACTS:

Cannot burn out at the bottom.
Cannot explode.
The quickest generator of steam.

SALAMANDRINE BOILER COMPANY,

Works: Newark, N. J., U. S. A. 220 Broadway, New York.

SEND FOR DESCRIPTIVE PAMPHLET.



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The Peerless Spiral Piston and Valve Rod Packing

It will hold 400 lbs. of steam

Once tried always used

Will run twelve months in high speed engines

Arctic Packing

To be used exclusively for packing Ammonia Pumps

This packing is made in several hundred sizes

This packing is specially constructed for ice machine service, of layers of rubber and plies of duck which are so arranged and laid as to best resist the actions of ammonia, cold and heat.

The duck is a specially made duck, frictioned with an entirely new compound heretofore unknown to the rubber trade, and the core and back is of the celebrated Rainbow Packing compound, which is specially adapted to resist ammonia, cold and heat.

This packing is constructed on a strictly scientific basis, and the results obtained thus far have demonstrated fully its value for ammonia packing.

This packing is made in several hundred sizes. The rings may be slipped onto the rod very readily.

The usual rule is to be observed in giving measurements, the depth and width of stuffing box and size of piston rod, in order to get the size desired.

Sole Manufacturers of the

Celebrated Rainbow, Eclipse Sectional Rainbow Gasket, Hercules Combination and Honest John Packings.

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These Goods can be Obtained at All First-class Dealers.

The advertisements on pages 14-20

are devoted to

Boiler Room Equipment

as follows:

ASBESTOS—See NON-CONDUCTING COVERING.

ASH EJECTORS.
- Davidson, M. T.

ASH HOISTS.

BLOWERS—Also see VENTILATORS.
- American Blower Co.
- Boston Blower Co.
- Buffalo Forge Co.
- Sturtevant Co., B. F.

BLOW-OFF VALVES—See VALVES.

BOILERS—Also see ENGINE BUILDERS; also SHIP BUILDERS.
- Almy Water Tube Boiler Co.
- Boyer Patent Sectional Water Tube Boiler Co.
- Kingsford Foundry and Machine Works.
- Lake Erie Boiler Works.
- Rochester Machine Tool Co.
- Salamandrine Boiler Co.
- Stirling Co., The.
- Thorpe-Platt & Co.
- Thropp, John E., & Sons Co.

BOILER COMPOUND.

BOILER FEED PUMPS—See PUMPS.

BOILER PLATE.

BOILER STAYS.

BOILER TUBES.
- National Tube Co.
- Shelby Steel Tube Co.

CORRUGATED FURNACES—See FURNACES.

EXHAUST FANS—See BLOWERS.

EXHAUST HEADS.
- Sturtevant Co., B. F.

EXPANSION JOINTS.

FANS—See BLOWERS.

FEED CHECK VALVES—See VALVES.

FEED WATER FILTERS.
- Ross Valve Co.

FEED WATER HEATERS AND PURIFIERS.
- Learmonth, Robert.

FIRE ROOM PLATES.

FIRING TOOLS.

FLUE CLEANERS.

FORCED DRAFT—See BLOWERS.

FURNACES.
- Continental Iron Works.

GAUGE COCKS—Also see STEAM FITTINGS.

GRATES.

INDUCED DRAFT.

INJECTORS.
- American Injector Co.
- Eynon-Evans Mfg. Co.
- Lunkenheimer Co., The.
- Ohio Injector Co.
- Penberthy Injector Co.

MECHANICAL DRAFT—See BLOWERS.

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- Johns-Manville, H. W., Mfg. Co.
- New Jersey Asbestos Co.

REDUCING VALVES.
- Mason Regulator Co.

SAFETY VALVES.
- Star Brass Mfg. Co.

SENTINEL VALVES—See VALVES.

STAYBOLTS.
- Falls Hollow Staybolt Co.

STEAM CIRCULATORS.
- Bloomsburg, H., & Co.

STEAM GAUGES.
- American Steam Gauge and Valve Mfg. Co.

STEAM JETS.
- Bloomsburg, H., & Co.

STEAM PIPES.

STEAM SEPARATORS.
- De Rycke, Joseph, & Co.

STEAM TRAPS.
- Buffalo Forge Co
- Helios-Upton Co.
- Houghton, E. F., & Co.
- Sturtevant Co., B. F.

STOP VALVES—See VALVES.

THERMOMETERS.
- Helios-Upton Co.

TRAPS—See STEAM TRAPS.

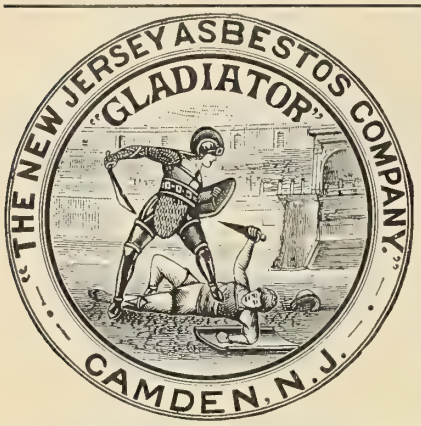
VALVES.
- American Steam Gauge and Valve Mfg. Co.
- Ashton Valve Co.
- Chapman Valve Mfg. Co.
- Crane Co.
- Eynon-Evans Mfg. Co.
- Foster Engineering Co.
- Kennedy Valve Mfg. Co.
- Lunkenheimer Co., The.
- Mason Regulator Co.
- Star Brass Mfg. Co.
- Walworth Mfg. Co.

VENTILATING FANS—See BLOWERS.

WATER GAUGES.

WHISTLES.
- American Steam Gauge and Valve Mfg. Co.
- Chapman Valve Mfg. Co.
- Lunkenheimer Co., The.
- Star Brass Mfg. Co.

If specialties are wanted which are not advertised, Marine Engineering Information Bureau will furnish names of manufacturers and dealers.



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Original and only manufacturers of the far-famed

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Asbesto-Metallic Sheet Packings, Valve-Stem and Piston Rod Packings and Gaskets.

The only Packings and Gaskets which have given, and continue to give, uniform satisfaction throughout. Will resist the highest steam pressure, and the Sheeting and Gaskets can be used over and over again without impairing their efficiency.

N. B.—All goods of the same character on the market are imitations, and, almost invariably, are of foreign manufacture.

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SEAMLESS TUBES

For Marine and Other Uses

THE NATIONAL TUBE CO.

The Largest Manufacturer in the World of Wrought Iron and Steel Tubular Goods, is now prepared to accept orders in any quantity and for any size of

SEAMLESS TUBES

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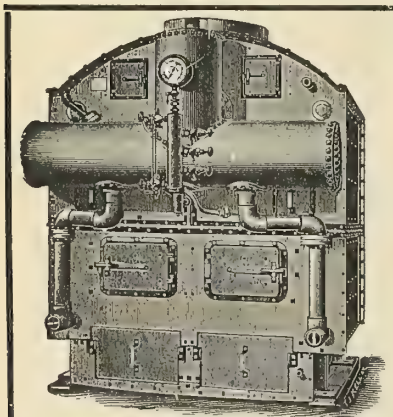
LONDON, ENGLAND—Dock House, Billiter Street



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130 Steam Yachts, ... 1 to 5 Boilers Each.
60 Passenger Steamers, Tugs and Lighters, ... 1 to 6 Boilers Each.
15 Vessels in the Government Service.
40 Steam Launches. 75 Stationary Plants.

ALMY WATER-TUBE BOILER CO.

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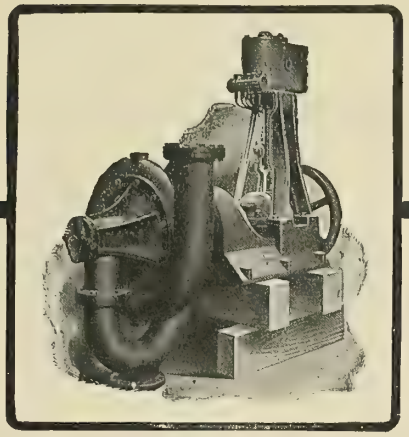

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Marine Boilers

INTERNALLY FIRED TYPES.

KINGSFORD FOUNDRY AND MACHINE WORKS
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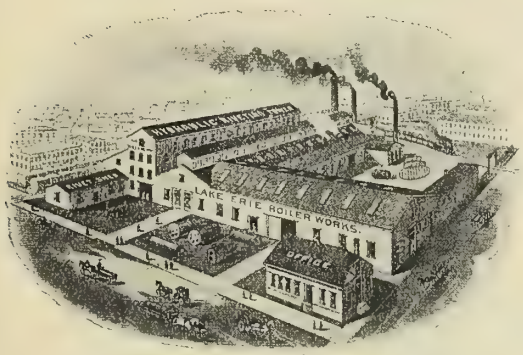
RICHARD HAMMOND, Proprietor



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BUFFALO - - NEW YORK

WHEN using mechanical draft keep tab on it by means of our fire room telegraph system. You thus have the most power when it is wanted, and there is no unnecessary waste of coal.

WE ALSO MAKE

Engine Room Telegraphs

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Steering Telegraphs.

R. E. KIRK JR. CO.,
Baltimore, Md.

TO HAVE A JOINT
Fitted with a Merwarth Metallic Gasket
is to have a joint
TIGHT TO STAY TIGHT

MERWARTH METALLIC GASKET CO.
SAMPLES FREE NOW
120 Liberty Street
NEW YORK

WATER FILTERS REGULATORS & ENGINES

ROSS REGULATING VALVES will control the flow and maintain any desired pressure.

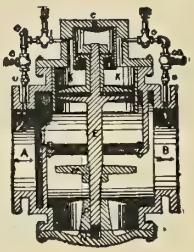
Their extensive use demonstrates their efficiency.

Write us for evidence.

THE ROSS VALVE CO. TROY N.Y.

PRESSURE REGULATING VALVES
For all Purposes.

Perfection in the control of Steam, Water, Air.



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testify to the simplicity and safety of

Kennedy Valves

for all pressures. We also manufacture valves and gates for

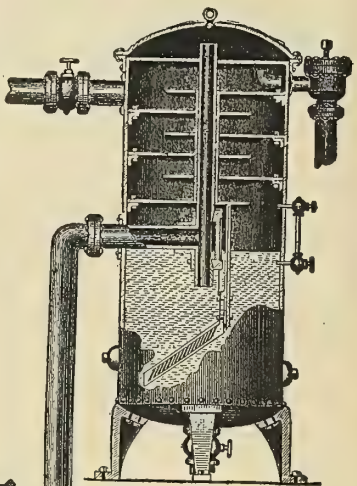
WATER, STEAM, GAS, OIL, AMMONIA.

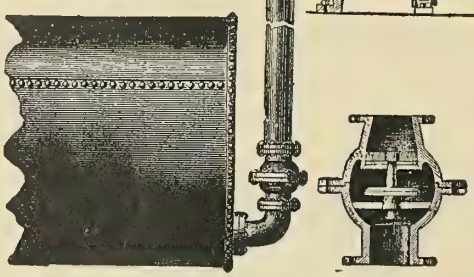
Leading jobbers carry our goods and there is always a full stock at our New York warehouse.

The Kennedy Valve Mfg. Co.,
63 Beekman St., New York.

The BUFFALO
Feed Water Heater and Purifier.

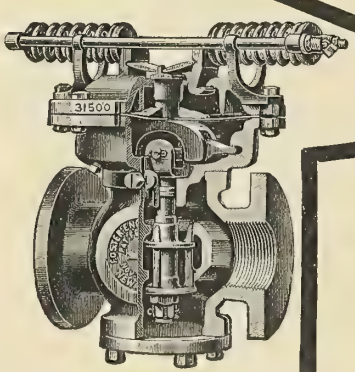
Used on many of the large and most economical steamers on the Great Lakes under various steam pressures up to 250 pounds. A most efficient apparatus. Send for catalogue.

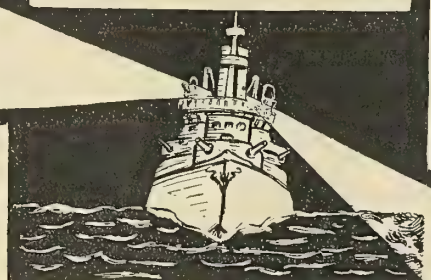




Robert Learmonth, 200 Lafayette Ave., BUFFALO, N. Y.

Class W.





FOSTER ENGINEERING CO.
NEWARK, N. J.

The Searchlight of the U. S. Navy

has been turned on the FOSTER Steam Appliances and 90 per cent. of Uncle Sam's ships are now equipped with them. The CLASS W. valve maintains a fixed delivery pressure regardless of the initial pressure.
Let us tell you more about it.

Write Now for the 1902 FOSTER Catalog

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" 3, A. L. Jones, 289 Champlain St., Detroit, Mich.
" 4, Jas. A. Macauley, 5802 Michigan Ave, Chicago, Ill.
" 5, Otto Boettger, 1035 E. Hopkins Ave., Baltimore, Md.
" 6, Clifford E. Shrodes, Room 13, Railroad Exchange, 110 North Fourth St., St. Louis, Mo.
" 7, B. J. Holmes, 191 Coyle St., Portland, Me.
" 9, Wm. Bridges, 784 1-2 12th St., Milwaukee, Wis.
" 13, Wm. V. H. Sheer, 1129 Venango St., Philadelphia, Pa.
" 15, U. J. Lewis, 332 Deloronde St., New Orleans, La.
" 17, Francis S. Neal, care Mt. Auburn Cable Road, Cincinnati, O.
" 18, Wm. Hurst, 715 Walnut St., Cairo, Ill.
" 20, Jos. B. Barry, 206 Keel St., Memphis, Tenn.
" 23, W. R. Lewis, 213 East Front St., Jeffersonville, Ind.
" 24, Jos. B. Flach, 327 N. Fourth St., Paducah, Ky.
" 26, T. H. Kirkbride, 910 East Columbia St., Evansville, Ind.
" 27, N. P. Slater, 1010 Garfield Ave., Bay City, Mich.
" 30, John W. Farrow, 816 Rebecca St., Allegheny, Pa.
" 33, W. J. Du Bois, Tompkinsville, S. I., New York.
" 35, Wm. Warin, 36 East St., San Francisco, Cal.
" 36, Joseph Thomas, 57 Sea St., New Haven, Conn.
" 37, J. A. Page, 1743 Huron St., Toledo, O.
" 38, W. H. Collier, 73 Starr Boyd Building, Seattle, Wash.
" 39, Frank W. Buchner, 124 Chestnut St., Erie, Pa.
" 40, S. P. Mallia, 1028 Market St., Galveston, Tex.
" 41, J. W. Collyer, Goble, Columbia Co., Ore.
" 42, Hy. J. Sloan, 810 Spearing St, Jacksonville, Fla.
" 43, Thos. J. Coyle, 627 Superior St., Port Huron, Mich.
" 44, George Layman, 274 Third Ave., Manistee, Mich.
" 45, Jas. A. Rourke, 708 East Bay St., Savannah, Ga.
" 46, D. W. Farrell, Clayton, N. Y.
" 47, Norman Raines, 804 East Spruce St., Sault Ste. Marie, Mich.
" 48, Carl V. Hart, 425 Perry St., Sandusky, O.
" 51, Henry Connell, 28 Yuba St., Muskegon, Mich.
" 53, Harry Stone, Marine City, Mich.
" 55, Archie Stalker, Electric Light & Power Plant, Cheboygan, Mich.
" 57, E. B. Meeker, 71 Abeel St., Kingston, N. Y.
" 58, E. Capers Haselden, P. O. Box 31, Georgetown, S. C.
" 59, Daniel L. Kemp, Box 36, East Boston, Mass.
" 62, Nathan S. Lawrence, 30 Connecticut Ave., New London, Conn.
" 65, Wm. McCarrel, 8 Vernon St., Charleston, S. C.
" 67, Wm. S. Bradley, Saugatuck, Mich.
" 70, Frank H. Goodell, 536 1-2 Commercial St., Astoria, Ore.
" 72, Thomas Navagh, 40 Lake St., Oswego, N. Y.
" 73, Louis Garot, Box 1526, Green Bay, Wis.
" 76, Orson Vanderhoef, Grand Haven, Mich.
" 77, Jos. P. Brewer, 206 N. Ninth St., Manitowoc, Wis.
" 78, F. A. Rehder, 29 W. Superior St., Duluth, Minn.
" 80, R. P. Cook, 46 Elm St., Albany, N. Y.
" 81, Jas. L. Sweeney, 204 E. Saragossa St., Pensacola, Fla.
" 82, Fred H. Gowell, 427 Middle St., Bath, Me.
" 84, Joseph F. Dumas, 403 Dauphin St., Mobile, Ala.
" 85, G. H. Miller, 412 Fifth St., Alpena, Mich.
" 86, Sherman A. Smith, 737 Menekannee Ave., Marinette, Wis.
" 87, Geo. B. Milne, 1003 Trumbull St., Detroit, Mich.
" 88, C. O. Chapman, S. B. Canal, Sturgeon Bay, Wis.
" 89, Robert Vallance, 69 Morris St., Ogdensburg, N. Y.
" 91, Robert Davidson, 17 Fairfield Ave., Harbor Sta., Ashtabula, O.
" 92, H. E. McArthur, Courier-Herald Bldg., 3d floor, Saginaw, W. S., Mich.
" 93, M. E. Davis, M. T. & S. Co., 929 D St., N. W., Washington, D. C.
" 94, George R. Jones, Box 222, Washington, D. C.
" 95, A. P. Jerguson, Box 198, Key West, Fla.
" 100, Jas. P. Lynch, Honolulu, H. I.
" 101, Thos. J. Hanlon, Box 765, Norfolk, Va.
" 102, Fred W. Linsemeyer, 210 Clinton St., So. Haven, Mich.
" 103, C. H. Hall, Box 512, New Berne, N. C.

TRADE PUBLICATIONS.

"**What's New**" is the title of a 4-page folder issued monthly by the Spreckels-Crawford Company, 713 Market street, San Francisco, Cal. This folder is issued in order to describe recent inventions and improvements, and, we infer, is sent free to all who are interested in steamship supplies, machinery, and other similar lines.

Air Compressors is the name of a little catalogue issued by Herron and Bury Manufacturing Company, Erie, Pa. This company makes a straight-line air compressor; also, a center-crank compressor. Besides these machines, the company builds a complete line of air receivers. The catalogue gives dimensions of the machines and tanks.

A Safety Tread for covering ships' ladders and stairways, steps of public buildings or staircases, is manufactured by the American-Mason Safety Tread Company, 40 Water street, Boston, Mass. The company has issued a handsome 28-page catalogue describing its non-wearable, unslippery treads, and most of the space in the catalogue is devoted to enumerating and illustrating the buildings in the different States of the country where these treads are in use. Many naval vessels, steamships, and yachts use this tread on their staircases.

Tool Makers' Engine Lathes are handsomely described in a new 10-page catalogue issued by the Pratt and Whitney Company, Hartford, Conn. This company has designed and placed on the market a new 10-inch by 5-foot engine lathe for the use of tool and model makers, and for all purposes where accuracy and convenience are essential. The bed of the machine is cast in one piece with the pan. The head spindle is made of selected crucible steel, ground, and runs in babbitt bearings. All other parts of the machine have been made of selected material and finished in a most careful manner. Copies of this catalogue can be had by applying to the main office or any of the agencies and mentioning Marine Engineering.

Brennan Standard Gasoline Motors for marine or automobile purposes are described in a 16-page, illustrated, pamphlet issued by the Brennan Manufacturing Company, Syracuse, New York. The points about this motor are that it has great range of speed and power, does not vibrate, is of moderate weight, and is economical with fuel. All motors are of the four-cycle type and are built with one or two cylinders. When of two cylinders, these are mounted horizontally with cylinders on opposite sides of the shaft. The method of cooling can be either by water jacket or by air; when of the latter type, the cylinders are made with large radiating surfaces. This company also manufactures the various items of equipment for a gasoline engine, namely, the carbureter, muffler, sparking plug, spark coil, and transmission gear. A copy of the catalogue may be had upon writing the manufacturers.

A new boiler which is now on the market, possessing some new features, is called the Salamandrine, manufactured by the Salamandrine Boiler Company, 220 Broadway, New York city. Tests are stated to have been made with this boiler of repeatedly evaporating every drop of water contained in it, and then turning on cold water and raising steam to 200 pounds pressure, without apparent injurious effect. It is also claimed that the circulation of the water throughout the coils is so perfect and so rapid that scales do not form in the coils. The boiler is made up of spiral coils placed vertically and connected to a central vertical drum. Outside of all is a spiral coil water jacket. Among the points claimed for it are that it will not burn out; is non-explosive; that steam can be raised to 220 pounds pressure from cold water in two and one-quarter minutes; can stand a steam pressure of 1,000 pounds; is economical; is made with all parts interchangeable; the burner cannot be extinguished by back draft. The company is prepared to install these boilers in steam yachts and launches, and other craft where boilers are needed not to exceed 50 horse power.

When writing to advertisers please refer to Marine Engineering.

The Superior is the title of a 36-page 6 by 9-inch catalogue issued by the Lake Shore Engine Works, Marquette, Mich. The catalogue takes up in detail the Superior engine, describing the design and material of each part of the machine. Then is shown and described a U. S. lifesaving station lifeboat equipped with Lake Superior engines. One double-cylinder machine is placed in the after air compartment, and runs through two sets of gears to shafts with propellers attached. Next is shown the layout of the plans of a launch, and then the various styles and sizes of a Superior engine. This company also builds standard size launches, and another large department is that of building machines for stationary service.

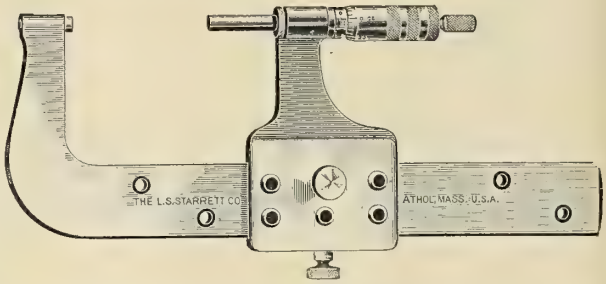
Motor-Driven Tools is the name of an artistically bound and handsomely engraved catalogue issued by the Crocker-Wheeler Company, manufacturers and electrical engineers, Ampere, N. J. The catalogue is bound in burlap and the pages are 7 1-2 by 10 inches. The descriptions and illustrations are in the main types of machines to which the electric drive has been applied. Engravings are given of each machine, showing the location of the motor. An enumeration of the machines to which these motors have been applied, and which are illustrated in the catalogue, includes: punches, shears, drill presses, shapers, finishing rolls, slotting machines, pressure blowers, lathes, ammonia pumps, band saws, etc., etc. The Crocker-Wheeler motor is used on both heavy and light machines and is either geared or bolted to the shafting. Copies of this catalogue will prove valuable to those interested in machinery, and can be obtained by addressing the company and mentioning Marine Engineering.

Coaling at Sea is the title of a handsome 9 by 6-inch catalogue issued by the Lidgerwood Manufacturing Company, 96 Liberty street, New York city. The catalogue describes the Lidgerwood-Miller marine cableway as installed on the U. S. battleship *Illinois* by the above-named company. It is stated that the first marine cableways were placed upon colliers, thus the necessary mechanism was carried on board the collier. Now, however, the system and machinery have been so simplified that but two winches are required, and these are placed on the battleship and are such as may be used for other purposes than coaling the ship. The only other deck space required is that for mounting two levers on the after bridge of the war vessel for operating the winches. The rest of the equipment consists of cables, special blocks, truck and carriage for carrying the coal from the collier to the ship. The capacity of this cableway depends largely upon the rapidity with which the bags can be filled and hooked to the lifting truck. In the tests on the English battleship 40 tons per hour were transferred, but the maximum capacity was not reached. A full description of this system and illustrations showing the method of attaching the marine cableway, with details of the parts, is given in this catalogue.

OUR PATENT

Six Inch Micrometer

will measure round work to 4½ inches and flat work to 6 inches. It weighs 21 ounces and is rigid and accurate.



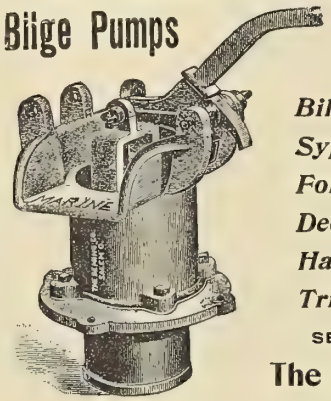
IT is sold in a neat leatherette case, and is a most desirable instrument for every engineer and machinist to have. . . .

We send free to all engineers a copy of our fine tool catalogue, No. 16 L, with Supplement showing many new tools.

The L. S. STARRETT CO.

ATHOL, MASS.

Bilge Pumps

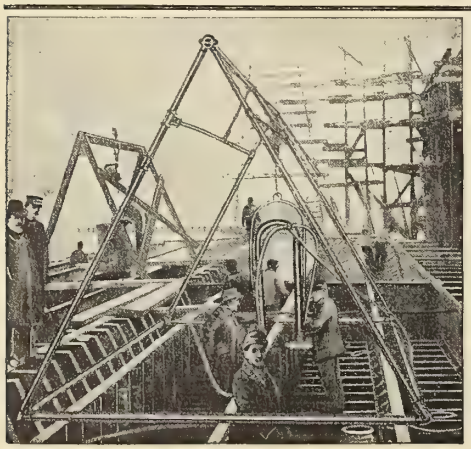


We make a complete line of

Bilge Pumps,
Syphon Pumps,
Force Pumps,
Deck and other
Hand Pumps.
Triplex Pumps.

SEND FOR CATALOGUE.

The Deming Co.,
Salem, Ohio.



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THE Q AND C

MOST ECONOMICAL AND EFFECTIVE METHOD OF RIVETING

PNEUMATIC TOOLS OF ALL KINDS

Q & C HAMMERS
Q & C RIVETERS
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THE Q & C COMPANY

114 LIBERTY STREET
NEW YORK

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THE reason Dixon's Pot-Lead is the best treatment for the hulls of yachts, launches and other fast craft is because of its perfect smoothness. It offers less friction to the water, and every bit of friction means loss of speed. We have had seventy-five years of experience in the manufacture of graphite products. Our Pot-Lead, like our other products, is the best form of graphite for its purpose. Send for circulars

JOSEPH DIXON CRUCIBLE COMPANY,
JERSEY CITY.

WE have complete Drawings and Patterns of a.....

GAS ENGINE

The engine has been thoroughly tested, and has been found very efficient and economical.

We wish to get into communication with parties who will take an interest in the business of manufacturing this engine.

Full particulars given upon inquiry to

GAS ENGINE,

Care Marine Engineering, 309 Broadway, New York

A neat booklet is issued by Clarence P. Day, advertising counsellor, 140 Nassau street, New York city, describing concisely his advertising shop and his methods of handling the advertising of manufacturers and others who seek to extend their trade. The booklet gives much information which will interest every man who wishes to secure publicity and efficiency in handling his advertising.

List No. 25 of second-hand machine goods for sale by the Garvin Machine Company, Spring and Varick streets, New York city, is now being distributed, and an inspection of the list shows that second-hand drill presses, gang drills, forges and blowers, gear cutters, grinding and polishing machines, engine and hand lathes, milling machines, planers, presses and shears, screw machines and shapers can be bought from this company.

The Individual Advertising Department is the title of a 54-page book, 5 by 12 inches in size, issued by the Whitman Company, 116 Nassau street, New York city. The price of the book is given as "any kind of a dollar." The book is neatly printed in two colors and is a fine specimen of typographical work. This feature, however, is unimportant compared to the amount of common sense which is shown by the author. He evidently appreciates that a great deal of money is wasted in careless and inefficient advertising and the many ways in which men are "worked" who have money to spend for advertising. Any of our readers who have anything to do with the advertising of a mechanical business will find it a good investment to secure a copy of this booklet. If he does not find in it enough information to make it much more than worth the dollar which it costs, we can assure him that the Whitman Company will return his money.

Circular No. 24 of the Union Telpherage Company, with offices at 20 Broad street, New York city, gives a description of some of the new installations of overhead telpherage system made by this company. In one paper factory it states that not less than six million bags are transported in 10 hours. The speed of 12 miles per hour is obtained, and at 12 per cent. grade the speed is 6 miles per hour. The telpherage truck carries 4,000 pounds and there are a number of curves around which it must go. This speed is very high for transporting through a crowded factory and the amount carried is, indeed, large for one machine. The maintenance of the telpherage system is low. There are no moving parts except the telpher, which is perfectly clean, and no skilled labor is required. Power for operating the telpher is taken from an overhead trolley, and the current is returned by a second overhead wire. Circular No. 23 describes a cross-country line of telpherage cable tracks. The line, which consists of a cable and overhead trolleys, is supported on A-frames in such a manner that two lines can be run, one on either side of the support. It can be taken up or down hill, around curves, or wherever necessary.

WATCH THIS SPACE FOR OUR NUMEROUS SPECIALTIES.

WALWORTH MFG. CO. TOOLS and SUPPLIES for STEAM WATER and GAS USERS BOSTON MASS.

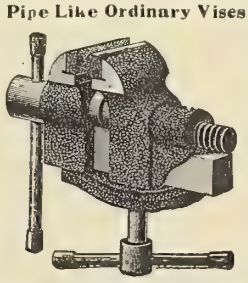
Walworth Extra Heavy Bench Pipe Vise

Is made especially for use in

MARINE REPAIR SHOPS AFLOAT AND ASHORE,

Grips pipe 1 to 6 inches inclusive, and by reason 8 of its solid and substantial "make up," also furnishes a first-class tool for general machine work.

Will not Crush or Jam Pipe Like Ordinary Vises



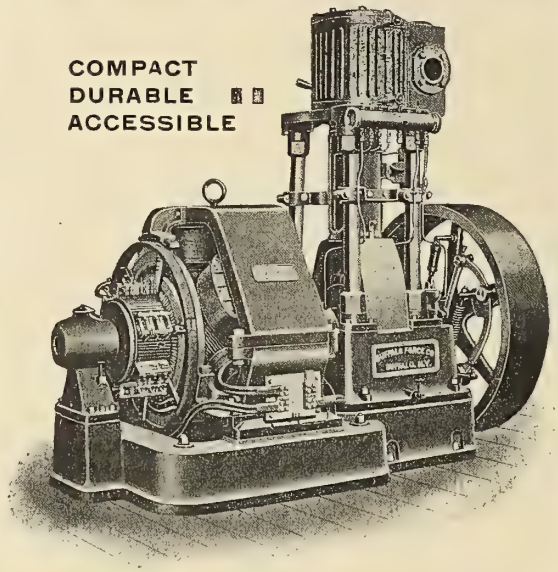
JOBBERS SELL THEM—IF YOURS DON'T, WRITE.

New York, Park Row Building. **WALWORTH MFG. CO.,** Boston, 128 Federal Street.

Write for our BLUE CATALOGUE "D." showing complete line of engineers' pipe fitting tools.

BUFFALO FORGE COMPANY ENGINES
FOR MARINE LIGHTING SETS

COMPACT
DURABLE
ACCESSIBLE



BUFFALO FORGE COMPANY
NEW YORK BUFFALO, N. Y. LONDON, ENG.

A Little Good Kauri Gum

in refined linseed oil makes an excellent medium for grinding
ZINC WHITE
intended for use on metal.

ZINC WHITE

is essential for durable paint in white or tints, and a small percentage of good gum in the oil adds to its working qualities and enhances its beauty.

The New Jersey Zinc Co.
11 BROADWAY NEW YORK

FREE: Our Practical Pamphlets:
"Paints in Architecture," "The Paint Question,"
"French Government Decrees."

A new type of direct-connected generator, styled type MPL, has recently been turned out by the Fort Wayne Electric Works, Fort Wayne, Ind. The machine is a very handsome one throughout.

Electrical Tables, containing reference tables for wires for electrical purposes, have been issued by the American Steel and Wire Company, Chicago, New York, Denver, and San Francisco. Among the tables are those for the dimensions and weights of copper wire, comparative sizes of wire by different gages, weight of wire by different gage, tables of iron and steel wire, galvanized wire, weight of copper cables, weatherproof wire, etc., etc.

Power Plants of the Pacific Coast is the name of a very handsomely illustrated booklet, 8 by 10 inches, containing a paper read before the New York Electrical Society by F. A. C. Perrine, D.Sc. It is a description of several of the large water-power plants of the coast, and takes up the general features and conditions met with along the lines. Power is generated among the Sierra Nevada Mountains and carried 154 miles to San Francisco at the enormous voltage of 50,000 volts. Copies of this interesting paper, we presume, may be had by applying to the Standard Electric Manufacturing Company, Pittsfield, Mass.

Storage Battery Electric Locomotives have many advantages for general factory purposes. Among these claimed are that there is no risk of fire, there are no trolley wires to maintain, there is no electrolysis from return currents, and any part of the works where a 12-foot radius curve can be made can be reached by the locomotive. It is also cheaper to operate and maintain than a span of horses, and the machinery, if ever out of order, can be easily gotten at, as it is all above the car platform. The batteries are also above the platform and can be easily inspected. Locomotives of this type are made by the C. W. Hunt Company, West Brighton, Staten Island, New York, and described in a special circular.

Catalogues No. 5 and 6, just issued by the Garvin Machine Company, Spring and Varick streets, New York city, describes the milling machine attachments made by this company. This catalogue is well illustrated.

The Four-Track News is the title of an illustrated magazine of travel and education published monthly by the Passenger Department of the New York Central and Hudson River Railroad, Grand Central Station, New York city. There are some interesting, well-illustrated articles on the Home of the Caribou; the Wonders of Electricity; The Berkshire Hills, and many tales of camp and sporting life. This publication will be of value to those seeking for places in which to spend vacation times. The price per copy is 5 cents, per year 50 cents.

After fire destroyed the factory of the Abendroth and Root Manufacturing Company one year ago, it was decided to move the works to Newburg, New York. Circular E, issued by this company from the offices at 99 John street, New York city, announces that business has been resumed and the company is prepared to take orders for spiral riveted pipe, straight riveted pipe, exhaust heads, water-tube boilers, Wright engines, Dixon-Corliss engines, sheet-iron work, tanks, general foundry and machine work. Views of the works are given in this small circular, together with views of specimen pipes.

Valuable Booklets Free.—The Smooth-On Manufacturing Company, of Jersey City, has moved into new quarters. The offices are now at 547 and 549 Communipaw avenue and the works are at 53 and 55 Harrison avenue. In its new laboratories the company has the best apparatus for general chemical analysis. A new treatise on this subject has just been issued by the company. It shows deep knowledge, and the style is plain and simple. Another book describes the Smooth-On Iron compounds, Smooth-On paints, and Smooth-On cements for iron, steel, and brass. Both these publications are free for the asking.

BUSINESS NOTES.

Dry-docks.—H. I. Crandall and Son Company, engineers and contractors, East Boston, Mass., has recently secured two contracts for marine railways: one at Wolfville, N. S., and the other, a 3,500-ton steel cradle marine railway, for Hall Brothers, Port Blakeley, Wash.

Wilson and Silsby Sails in Germany.—The yacht *Uncle Sam*, which won the yacht race off Kiel, Germany, last month, was fitted with sails manufactured by Wilson and Silsby, Boston, Mass. This firm has furnished sails for a number of the best-known yachts in European waters, not only American owned yachts, but many owned by Europeans.

A Fine Catalogue Free.—Charles H. Besley and Company, 10-12 North Canal street, Chicago, Ill., report that there seems to be no general let-up in business, even though it is the middle of the summer. Many orders are received for Helmet babbitt metal, and large shipments are being made of their celebrated Helmet oil and Badger and Bonanza oil cups. Gardner grinders continue to be called for from all corners of the world. Any of our readers who are interested in the large variety of tools and other specialties manufactured by this company should send for a copy of the large and fine catalogue which is sent free to all inquirers.

Ship Berths.—Lein, Irvine and Company, 328 East Twenty-third street, New York city, are devoting a large part of their attention to making berths and berth fittings of all kinds. This firm manufactures eighteen styles for first, second, and third-class cabins, forecastle berths, etc. This company has been particularly successful in equipping army transports. Unless especially ordered otherwise. all berths which this firm fits are made of metal, thus affording not only strength and lightness, but assuring cleanliness. The company issues a compact and thoroughly-illustrated catalogue, which illustrates very fully the many types of berths manufactured, and describes concisely and briefly each type.

Metallic Packing.—One of the best endorsements that France metallic packing can have is that the manufacturer, A. W. France, Tacony, Philadelphia, has been compelled to engage an extra shift of men, and the works are now running twenty-three hours daily in an endeavor to keep up with the large and ever-increasing demands for this packing. Both domestic and foreign orders are received from companies who have tested this packing and found it to meet all requirements. In order to meet the demands of the trade, Mr. France advises us that he is now manufacturing high grades of fibrous packing of the best wearing qualities. Further information in regard to the prices, etc., will be sent upon application.

For Steam Making Refrigerating Apparatus

MECHANICAL THERMOMETERS

HOHMANN & MAURER MFG. CO. TRADE H&M MARK ROCHESTER, N.Y.

For All Engineering and Manufacturing Purposes

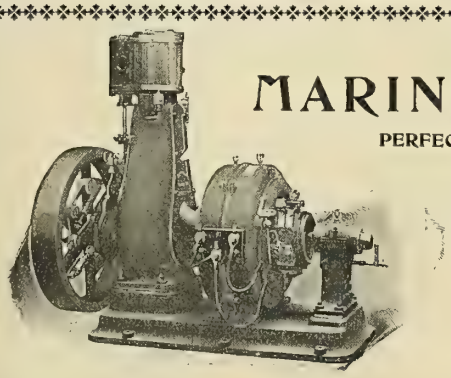
Write for Illustrated Catalogue M.

NEW YORK 85 Chambers Street
CHICAGO 119 Lake Street
LONDON 57D Hatton Garden

Infringement Suit Settled.—The Cleveland Pneumatic Tool Company, Cleveland, O., reports decision in its favor in connection with an infringement suit. The patents in question were in regard to a long-stroke hammer or hand riveter.

Resumption of Business.—C. J. Tagliabue, 53 Fulton street, New York city, maker and seller of thermometers, hypodermic syringes, and kindred articles, announces that, after undergoing a severe fire a few weeks ago which burned out his offices, he is now prepared to guarantee better service than ever before.

Electric Heaters.—The Simplex Electrical Heating Company, 77 Cornhill, Boston, Mass., has taken and will conduct the electric heating business which has been developed by the heating department of the Simplex Electrical Company. This change separates the electric heating business from the manufacture of insulated wires and cables, so that this part of the business can be carried on with a broader policy. Additional factory buildings are now under construction, which will provide more than three times the present capacity. The management will remain the same as heretofore. The principal office of the company will be at 77 Cornhill, Boston, although orders and correspondence can, if desired, be sent to the factory at 116 Franklin street, Cambridgeport, Mass. The Chicago office will remain in charge of H. R. Hixson, 1137 Monadnock Block. James I. Ayer remains as manager of the company.



DIRECT CONNECTED

MARINE GENERATING SETS

PERFECT SERVICE. LEAST SPACE, WEIGHT AND ATTENTION.

The design and construction of our apparatus are based on scientific principles resulting in unusually high efficiency and remarkable endurance under the most exacting conditions of service, and giving the best possible commercial value. Send for Bulletin No. 10115.

SPRAGUE ELECTRIC COMPANY

General Offices: 527-531 West 34th St., New York

Chicago: Fisher Bldg. Boston: Weld Bldg. St. Louis: Security Bldg. Baltimore: Maryland Trust Bldg.

For the South American Trade.—The Pittsburg Blue Print Company, Pittsburg, Pa., has recently appointed Señor Ernesto Thomas, of Santiago, Chile, to represent the company in the countries of Peru, Equador, Colombia, Bolivia, and Chile.

Change of Address.—The U. T. Hungerford Brass and Copper Company, New York, announces that, owing to the fact that the Rapid Transit Commission is about to build a subway station on this company's property, it will move to the new Hallenbeck building, corner of Pearl and Park streets, and occupy the basement, street floor, and first floor above the street. As soon as an adjoining building is completed the company will occupy similar floors in each, giving a total of about 3,000 square feet of floor space. Here will be carried in stock case goods, ammunition, and an immense stock of sample brass, copper, and kindred goods. Much of the space will be reserved for show-room purposes for other lines of goods. The offices and counting rooms will be located on the third floor.

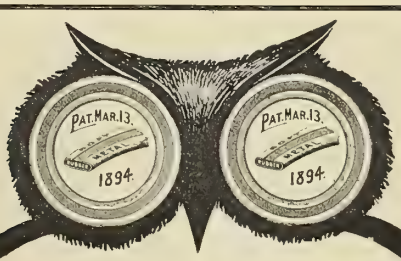
New Ashton Agency.—The Ashton Valve Company, 271 Franklin street, Boston, Mass., has opened an agency in the Union Trust Company's Building, Baltimore, Md. The office will be in charge of W. R. Baldwin as special agent, who will carry a full line of Ashton pop safety valves, steam gages, etc., covering both the marine and stationary trade.

Pneumatic Tools.—The Philadelphia Pneumatic Tool Company, Philadelphia, Pa., has opened an office in South Africa, with headquarters at Johannesburg. This agency will be in charge of General Samuel Pearson, late of the Boer forces. General Pearson has been in the United States for some months in the interests of his Government, in the attempt to have the mule shipments from Port Chalmette stopped. Now that peace has been declared, he will return to his former business in machinery lines, and will handle the accounts of the Philadelphia Pneumatic Tool Company and others. Before coming to America, General Pearson saw much active service in the field, for a time in charge of railway traffic.

"Benedict-Nickel"
Seamless Condenser Tubes
Resist Electrolysis
"BENEDICT-NICKEL" Seamless Condenser Tubes are the only tubes that are *not* readily effected by Electrolysis.
"Benedict-Nickel" is an alloy of nickel and copper. The tubing is stronger, tougher and denser than any other. By hot rolling a solid cylindrical billet upon a forming mandrel, it is made like a twist gun barrel.
Send for treatise, "Electrolysis of Condenser Tubes," which gives full scientific reasons for the superiority of "Benedict-Nickel."
We are also large manufacturers of brass and copper tubing, made by the same process as "Benedict-Nickel," and of brass and copper sheets, wire, etc.
BENEDICT & BURNHAM MFG. CO.,
Main Office and Factory, Waterbury Conn.
New York, 253 Broadway. Boston, 172 High Street.
V. Waring, N.Y.

Bearing Brasses.—A letter written to Wm. A. Hardy, Fitchburg, Mass., by the superintending engineer of the Boston Steamship Company, states that the Hardy S. S. Metal has been used on all of the steamers of the Boston and Philadelphia fleet for seventeen years, and during that time it has given entire satisfaction. The feature of this metal is its marvelous durability, and the superintendent states that he regards it as the best metal ever used.

Classification of Vessels.—The following vessels have been recently classed and rated by the American Bureau of Shipping in the Record of American and Foreign shipping: American screw *Berkeley,* Am. screw *Atlantic,* Am. screw *Valencia,* Am. bark *Grace Deering,* Am. schooner *Harry L. Fenner,* Am. schooner *Gracie D. Buchannan,* Am. tern *H. E. Thompson,* Am. barge *Santiago,* British schooner *Glenrosa,* Br. tern *Unique,* Br. tern *Arthur M. Gibson,* Am. bark *Onaway,* and Br. barkentine *Athena.*



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Consulting Engineer.—John Haug, consulting engineer and naval architect, announces his removal from 206 Walnut street to 536 Bourse Building, Philadelphia. Mr. Haug was formerly ship and engineer surveyor to Lloyd's Register.

A Perilous Launch Trip.—The New York Kerosene Oil Engine Company, New York, evidently has perfect confidence in its engines, as one of its boats has just started on a trip across the Atlantic ocean. It is a 38-foot launch, navigated by Capt. Wm. C. Newman, whose only companion is a sixteen-year-old son. The launch is equipped with a 10-horse power engine, and it is understood that 600 gallons of kerosene are carried along as fuel. This engine is of the explosive type.

Pipe Covering.—The pipes in the plant of the Tesla laboratory, Wardenclyffe, Long Island, New York, were recently covered by the asbesto-sponge felted sectional pipe covering made by the H. W. Johns-Manville Company, 100 William street, New York city. The work has given satisfaction to the owner. The covering is made of fibers of asbestos and a small quantity of granulated sponge, thus combining the familiar properties of asbestos with the lightness and porosity of sponge.

Naval Architect Masters.—Arthur Masters, who has opened an office at 29 Broadway, New York city, as naval architect and marine engineer, was brought up in the shipbuilder's business. He served an apprenticeship in the yard of Sir W. G. Armstrong, Mitchell and Company, Newcastle-on-Tyne. Mr. Masters came to this country in 1890, and had charge of the construction of U. S. S. *Bancroft* at the Crescent shipyard. In 1893 he went to the yard of the Wm. Cramp and Sons' Ship and Engine Building Company and worked on the *St. Louis, St. Paul,* together with several naval and merchant marine vessels. In 1898 he made an extended trip through Europe, visiting shipyards, and, upon his return, became the leading draftsman in the Crescent shipyard. In addition to designing, Mr. Masters will do ship and engine surveying and a yacht and steamship brokerage business.

An Important Purchase.—It is stated that the Standard Roller Bearing Company, Philadelphia, Pa., has purchased the plant and equipment of the Roller Bearing and Equipment Company, Keene, N. H. This purchase, together with that of the Grant Roller Bearing Axle and Wheel Company, of Cleveland, O., will give the Standard Roller Bearing Company a large share of the roller-bearing business, both because of equipment and the patents held. The Standard Roller Bearing Company, owing to increased demand for its product and because of the expected removal of the Keene plant to Philadelphia, has purchased a large piece of land in that city and is about to erect a model factory 200 feet long and 150 feet wide. The property covers about 2 1-2 acres, and the buildings will be erected with a view of extending. The Hall Bros. Company, also of Philadelphia, recently removed from Boston, will occupy a portion of the new plant.

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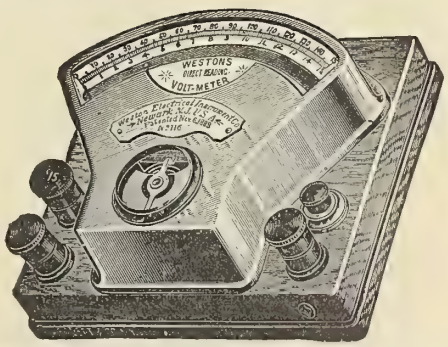
BERLIN:—European Western Electrical Instrument Co., Ritterstrasse 88.
LONDON:—Elliott Bros., 101 St. Martin's Lane.



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SPECIAL NOTICES.

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Position wanted as Loftsman or Foreman Fitter by steady, experienced man who understands yard and mold work thoroughly and who takes an interest in his work.

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HAND MOTOR FOR BOATS.—The Prouty Manufacturing Company, 35 Oliver street, Boston, Mass., has placed on the market a hand motor for propelling small boats. The operator can face the bow of the boat and easily work the motor with one or two hands. The machine is located about the middle of the boat, and is driven by swinging backward and forward a vertical lever.

CERTIFICATE OF AWARD.—A certificate of award and gold medal has been given by the judges of the South Carolina Interstate and West Indian Exposition to the Lake Shore Engine Works, Marquette, Mich., for the Superior marine engine manufactured by this company. The award was given because of "the simplicity of construction, sureness of action, perfection of build, and the large power developed in a minimum space and with minimum weight."

MANY AWARDS RECEIVED.—The South Carolina Interstate and West Indian Exposition, which was closed on May 31, gave the American Steel and Wire Company, Chicago, ten gold medals, four silver medals, four bronze medals, each medal representing the highest award in each class. The various exhibits which drew the prizes were cold-drawn steel shafting, nails, horseshoes, wire-drawing machinery, wires made of different metals, bicycle and automobile spokes, trolley wire, music wire, coal and coke, chemicals and colors, etc.

A FINE RIVER BOAT.—The Mexican *Industrial Review* for June contains a complete and well-illustrated description of the river steamer *Dos Rios,* built by the Marine Iron Works of Chicago for service on a Mexican river. The boat has a length of 111 1-2 feet 6 inches over all and beam of 22 feet 8 inches. The average draft with ordinary load is 24 inches. The boat is propelled by two direct-acting, non-condensing engines, 9 by 48. The average steam pressure is 165, and the 12-foot paddle wheel makes 24 revolutions a minute. The boiler is of the Western river type and is designed to burn wood.

BRASS AND MALLEABLE UNIONS.—As a result of experiments with substitutes for malleable iron pipe unions, the Western Tool Company, Kewanee, Ill., has placed on the market the Kewanee Ball Joint Union. This pipe connection will appeal to those who have been annoyed by leaky joints and worn packing. No gaskets are required for the Kewanee. In most joints where metal gaskets are used water-tightness cannot be maintained, because of the varying temperatures which create unequal expansion in the different metals employed. In the Kewanee union the brass part, which is the most sensitive to varying temperatures, is confined by a ring of malleable iron, screwed on at normal temperature until a tight seal is made.

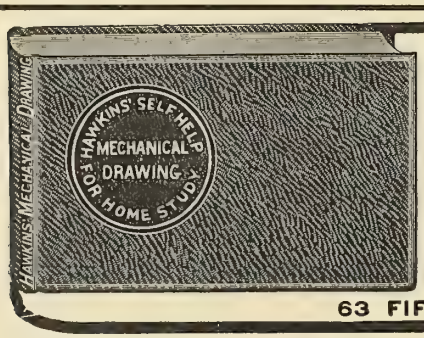
CHANGE OF ADDRESS.—The northwestern office of the Pennsylvania Steel Company is now located in the Western Union Building, Chicago, Ill., and in charge of Clifford J. Ellis, sales agent, and Robert E. Belknap, assistant sales agent.

NEW FACTORY.—The Cleveland Pneumatic Tool Company, Cleveland, O., has purchased a tract of land on Hawthorne and Second avenues, of that city, and will at once begin the erection of modern factory buildings. This enlargement was necessitated by increased business.

ELLIS AND EAVES DRAFT.—We are informed that the many installations of Ellis and Eaves draft which have been made on vessels built by the American Shipbuilding Company on the Great Lakes by representatives of John Brown and Company, Sheffield, England, are in very successful operation. In two weeks the shipbuilding company booked orders for seventeen new steamers, seven of which are to have Ellis and Eaves draft and ten natural draft.

EMERGENCY ACCIDENT CASE.—A very convenient and useful emergency accident case, called the No. 10, has been placed on the market by the Adolph Levy Company, 127 East Twenty-third street, New York city. The case includes several ready-made field dressings, various other kinds of bandages and dressings for wounds, septic and antiseptic dressings, etc. This case is in extensive use throughout the United States, on board ships, in factories, mines, machine shops, etc. A valuable addition is a printed bandage upon which are illustrated the methods of bandaging wounds in various parts of the body and how to set broken bones, etc.

BABCOCK AND WILCOX BOILERS.—The following quotation from the report of the committee appointed by the Lords Commissioners of the British Admiralty to consider certain questions respecting modern types of boilers for naval purposes may be of interest: "In the course of their investigations the committee have watched the Babcock and Wilcox boilers fitted in the S. S. *Martello,* of the Wilson Line, employed in the Atlantic trade between Hull, Boston, and New York, and copies of the reports of their inspections have from time to time been forwarded to their Lordships. These inspections have taken place at the end of every round voyage for fourteen months, and the committee's opinion is that these boilers have stood the test of usage in the mercantile marine extremely well. The vessel has run about 91,000 miles since the boilers were put in, and has usually been less than a week in port at either end; the only repairs required have been those of the ordinary upkeep of any boiler, such as fire bars, brickwork, etc., and only six tubes have required renewal. This opinion is strengthened by the inspections of boilers of the same type fitted in the *Numidian,* the *Buenos Ayrean,* and the *Turret Cape.* In the case of the last-named vessel, the boilers have been in use seven years and cannot have been as well looked after as they would have been in the Navy, and their condition when examined recently was satisfactory. The committee have also examined and tested boilers of the same type in H. M. S. *Sheldrake,* and find that, although they have been in use for four years, their condition is good and they have given little trouble."



Learn to Draw. This book, as shown in illustration is a self-instructor for home study and practice in the art of Mechanical Drawing for Engineers, Machinists, Electricians, Metal Workers and all interested in Drafting for shop practice, and has been prepared in plain practical language, and illustrated, by the author of "Hawkins' Educational Works." The book is divided into 28 different subjects which comprise the fundamental principles of drawing, each heading being thoroughly treated. There are 320 pages, 300 illustrations and diagrams. The book is handsomely bound in green cloth, gold edges and titles, size 7 x 10½ in., printed on fine paper. Upon receipt of $2 the book will be sent to any address prepaid, money returned if not as represented, order to-day; see order coupon.

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" 102, Fred W. Linsemeyer, 210 Clinton St., So. Haven, Mich.
" 103, Herbert Parkins, New Berne, N. C.

TRADE PUBLICATIONS.

The International Sprinkler Company, Philadelphia, Pa., is sending out an 8-page folder, giving the lists of the installations of this system in factories, shipyards, wharf buildings, and large establishments of various kinds all over the country.

A supplement has been issued by the L. S. Starrett Company, Athol, Mass., to this company's Catalogue No. 16 of fine mechanical tools. Among the new tools described in this catalogue are: measuring tapes and rules of various kinds, universal dividers, screw-pitch gages, punches, gages and micrometers of many kinds, hack saws, clamps, levels for testing shafting, etc.

"Galvanum," a Paint that Will Adhere to Galvanized Iron, is the title of a catalogue now being distributed by the Goheen Manufacturing Company, Canton, O. A great deal of information is given regarding the painting of metal surfaces, and many illustrations are shown of boats, steel structures, and other metal surfaces protected by this paint. Users of paint for metal surfaces will find a copy of this catalogue of interest.

The subject of Calorimeters is very completely covered in a pamphlet written by Prof. R. C. Carpenter and issued by the Schaeffer and Budenberg Manufacturing Company, Lee Place, Edwards and Bedford streets, Brooklyn, N. Y. The catalogue comprises 34 pages and takes up, each in turn, the throttling calorimeter, a new form of steam calorimeter, and the improved coal calorimeter. There is also a table giving the properties of saturated steam in much detail, and a page devoted to discussing the importance of determining the importance of moisture in steam.

Two catalogues of machine tools are now being distributed by the Garvin Machine Company, Spring and Varick streets, New York. Catalogue No. 3 is devoted to vertical milling machines, profilers, and duplex milling machines. It is well illustrated with good wood cuts, and, as it comprises 24 pages 6 by 9 inches in size, its value can be readily appreciated. The other catalogue is No. 8, and is devoted to screw machines, monitor lathes, forming machines, and double-turret screw machines. It is the same size as the other and is equally as well printed. It comprises 28 pages.

Pressure and volume blowers, as manufactured by the American Blower Company, Detroit, Mich., are fully illustrated and thoroughly described in a handsome catalogue, known as Catalogue No. 41, which is now ready for distribution. The catalogue is finely printed in two colors on coated paper. Each blower is illustrated with fine engravings, many of them being half-page or more in size. In addition to the engravings showing the blowers complete, many pictures are given of the different parts with the blowers taken asunder. There are also sectional views, together with many tables of dimensions, speeds, capacities, horse powers, etc. In addition to those direct-connected to electric motors, there are blowers belted and direct-connected to steam engines. There is much information also regarding subjects kindred to the operation of blowers, so that the catalogue is made very valuable to any one at all interested in the subject.

Liquid Fuel, Its Advantages for Shipyards and Manufacturing Plants, is the title to an excellent catalogue now being distributed by W. M. Simpson and Company, Old Colony Building, Chicago, Ill. It comprises 32 pages, neatly printed in two colors. The first device described is the Ferguson portable heater, which was illustrated and described in MARINE ENGINEERING for May, 1902. This heater is designed especially for flanging and working boiler plates, straightening corrugated furnaces, heating laps, building up crank shafts, removing shaft couplings, taking off propellers, heating bent beams and plates for straightening, and much other such work. A number of full-paged illustrations are given showing the use of the heater for this purpose. Several pages are devoted to the discussion of "Oil as Fuel," giving much valuable information. Other types of Ferguson oil furnaces are also described, including rivet furnaces, forging furnaces, angle furnaces, and annealing furnaces.

The Brass Founders' Supply Company, 20-34 Prospect street, Newark, N. J., is now distributing Catalogue No. 11. The catalogue covers thoroughly all the modern equipment for a brass foundry. It is fully illustrated, and with complete reading and descriptive matter, tables of sizes, dimensions, etc., prices and other information, the catalogue is made very valuable to any one who has to do with brass foundry work.

Users of hoists will want to send for a copy of Bulletin No. 209, which is now being distributed by the Sprague Electric Company, 527 West Thirty-fourth street, New York. This bulletin is devoted to electric trolley hoists of various kinds which this company manufactures. They include hoists of almost every size, such as would be used in engine rooms or in wharf and warehouse buildings, to the very largest used in engine shops, shipyards, etc. The pages are 7 by 9 inches in size, and on nearly every other page is a page-size cut, so the hoists are well illustrated.

The Underfeed Stoker Company, whose New York office is 149 Broadway, is distributing a very complete catalogue of about 90 pages which will interest every user of steam. To begin with, it is a neat specimen of printing and is illustrated thoroughly. The stoker which this company manufactures is shown in all conditions and positions, and explained to the utmost detail. The catalogue is 6 by 9 inches in size, and, as most of the pictures are full page, the value of the catalogue can be readily appreciated. Many letters are given in the back part of the catalogue from users of the stokers, speaking of them in the highest terms.

The New York Rapid Transit Tunnel is very handsomely illustrated and thoroughly described in a catalogue which is being distributed by the Rand Drill Company, 128 Broadway, New York. So many pictures are given in the catalogue and they are so large that a much more complete idea of the extent of this great work can be had from this book than from inspecting the tunnel itself The book is published as "illustrating the use and application of the Rand drills and Rand air compressors in centralized air-power plants." A perusal of this book will quickly impress the reader with the fact that the success of the subway is due very largely to the value of compressed air for drilling and such purposes.

The Monarch Automatic Engine Stop, being a description with illustrations of the Monarch system of automatic safety devices for use on steam and electric motors, is the title of a very handsome catalogue issued by the Consolidated Engine Stop Company, 100 Broadway, New York. The catalogue is handsomely issued in two colors on coated paper, and is bound in heavy dark-green paper cover. The pages are 8 by 10 inches in size, and there are more pages of illustrations, full-page size, than of reading matter. Altogether there are 32 pages. The stop in its complete form is first shown, and then there are sectional views and pictures of the stop as attached to engines, so as to show its application and manner of operating. Every engineer will find a copy of this catalogue well worth careful perusal.

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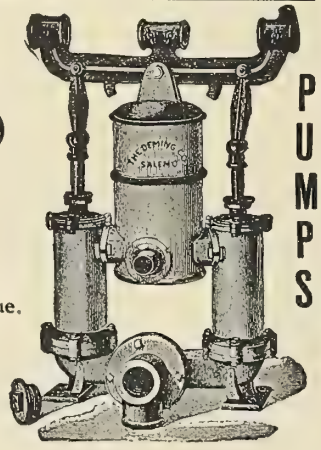

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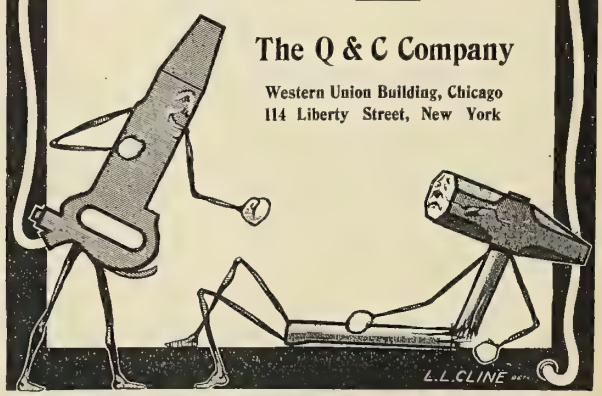

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The Buffalo improved ventilators were fully described in a neat catalogue issued some time ago by the Buffalo Forge Company, Buffalo, N. Y. There was such a demand for this catalogue that the entire edition was soon exhausted and another edition has now been printed. The catalogue is 3 1-2 by 6 1-2 inches in size, and is typical of the excellent publications issued by this company.

The Fort Wayne Electric Works, Fort Wayne, Ind., are distributing two new catalogues 8 by 10 inches in size. One of them is devoted to switchboard watt-meters and the other to enclosed direct-current series arc lamps. This catalogue is well printed and thoroughly illustrated, and made to conform to the other catalogues of this company, so that they can be readily bound.

Theo. Audel and Company, 63 Fifth avenue, New York, are distributing a booklet telling very thoroughly of the new book which this firm has just issued, entitled "Automobiles." The price of the book is $5. This pamphlet gives the table of contents of the book and reproduces many illustrations and pages, so that the reader can get an excellent idea of the quality and value of the book.

Fire Hose is the subject of a folder being distributed by the Boston Belting Company, 256 Devonshire street, Boston, Mass. Two kinds of hose are referred to: cotton-mill hose, which is described as rubber-lined, light, strong, durable, and waterproof, and which is credited with many other good features; the other is linen hose, which is unlined but is extensively used where it is necessary to keep hose hung up in dry places to be used in case of fire.

BUSINESS NOTES.

MUSICAL INSTRUMENTS.—Special air whistles, which are claimed to be the only four-tone, adjustable, single-bell, air-chime whistle, for use on naphtha and electric launches, or wherever an air whistle is required, are manufactured by the Kinsley Manufacturing Company, Bridgeport, Conn. These whistles produce four tones, pitched to a musical scale, giving an agreeable and melodious sound, and can be heard much farther than a common whistle. The bell is seamless brass tubing, readily raised or lowered to conform to any pressure used. The whistle can be operated by a hand air pump or air supplied from a tank. It requires but little air to blow it. The company furnishes a powerful hand air pump when required, capable of operating a 1 1-2-inch to 3-inch diameter whistle. The whistle, suitably piped, can be placed on the roof of the pilot house or at any point within 20 feet of the pump, the latter being of sufficient capacity to produce long, loud blasts on the whistle.

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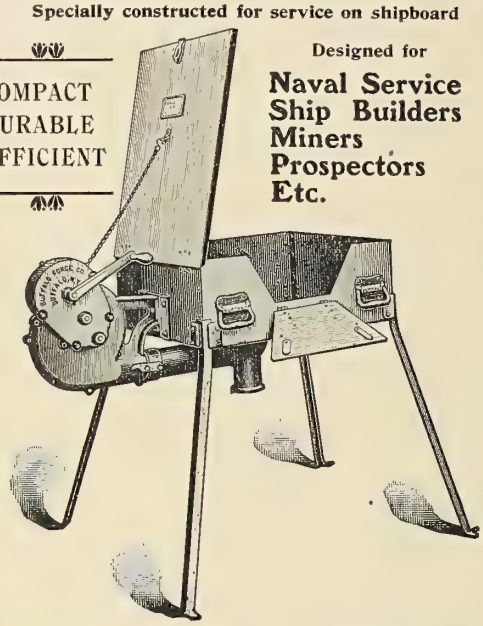

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ZINC WHITE

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New York

BAXTER D. WHITNEY AND SON.—Notice is sent out by Baxter D. Whitney, Winchendon, Mass., that he has formed a co-partnership by taking his son, William M. Whitney, into business with him. From this time on the firm will be Baxter D. Whitney and Son. The same business principles which have ruled from the founding of this plant over sixty years ago will remain in force, and the new firm will continue to progress as heretofore and manufacture a line of woodworking machinery of the highest grade.

MARINE PAINTS.—Samuel J. Williams, 11 Broadway, New York, announces that he carries everything in the line of paints and painters' supplies that would be called for in marine work. Mr. Williams manufactures the well-known Williams Submarine Paint, the Williams Copper Paint, the Williams Seam Paint, and the Williams Wood Anti-Fouling Paints. In addition, he has everything in the line of white lead, zinc, and the various colors.

BUFFALO FORGE GOODS.—The products of the Buffalo Forge Company, Buffalo, N. Y., are in steady demand throughout not only the United States, but European countries. The following list gives a few of the orders recently received through their different branch houses: Two 70-inch steel-plate steam fans for heating and ventilating, direct connected to two Buffalo engines, and one 130-inch standard steel-plate fan for mechanical draft to Copenhagen, Denmark. One induced draft plant and one 23-H.-P. engine for electric light plant in Dutch Guiana, South America. Five Buffalo engines of 45 H. P. each for driving generators, and one 38-H.-P. engine for a pumping equipment for a sugar factory in Cuba. One 20-H.-P. Buffalo engine to Germany. One 15-H.-P. Buffalo engine to Gothenburg, Sweden. One 60-inch standard steel-plate fan to Glasgow, Scotland. One 140-inch steel-plate fan to Barrow-in-Furness, England, together with other shipments to London and Manchester, England; Victoria, British Columbia; Halifax, N. S.; Portland, Oreg.; San Francisco, Cal.; New Orleans, La., etc.

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The period 1899–1901 marks a turning point in the history of shipbuilding in this country, hence these volumes are of great historic as well as technical value.

MARINE ENGINEERING
309 Broadway, New York

LARGE GAS ENGINES.—The Mianus Motor Works, Mianus, Conn., have been considerably enlarged, so that the company can manufacture not only more gas engines, but engines of large size. The company now manufactures, in addition to a complete line of gas engines for launches, oyster boats, and other craft, hoisting and pumping machinery.

FREE SAMPLES OF METAL POLISH.—George Wm. Hoffman, 295 East Washington street, Indianapolis, Ind., reports a greater demand than he has ever before experienced for his U. S. Infallible Metal Polish. This polish is sold either in powder or fluid form or as paste. The steadily increasing demand for this polish is because of its having been on the market many years, proving its value. In order to demonstrate that this polish is particularly adapted for use on vessels of any kind, Mr. Hoffman will send a sample box to any reader of MARINE ENGINEERING who will write for one.

PHILADELPHIA PNEUMATIC TOOLS.—The Philadelphia Pneumatic Tool Company, Philadelphia, Pa., reports an unprecedented rush of business, and its manufacturing capacity is taxed to the utmost, running night and day to keep up with orders. The increasing demand for the Keller rotary drill is a particularly noticeable feature in this company's business. Four of the large Eastern steel companies have recently purchased Keller tools to the aggregate number of 237. One of the Western trunk-line railroads has recently made a contract with the Philadelphia Pneumatic Tool Company to purchase at least 1,500 Keller tools within the next eight months. A cable order for Keller tools was received last week from Bilbao, amounting to several thousand dollars. The business of this company has increased so enormously that it is understood that the capital stock is to be raised to $2,000,000, in order to take proper care of the rapidly-growing business and to push sales in all parts of the world.

SANITARY SYSTEMS FOR YACHTS.—John D. Moore, 45 Liberty street, New York, has purchased the Hermes sanitary system for steam yachts and is now prepared to install it on vessels of any kind. A circular regarding this system, issued by Mr. Moore, states: "The annoying and disagreeable feature of a yacht is the plumbing. Expensively-built and luxuriously-furnished yachts are fitted with plumbing which would never be allowed in a house. It is so unsanitary and troublesome that it would not be tolerated by the Board of Health in the poorest dwelling ashore. The Hermes system is of modern scientific invention. It gives the yachtsman afloat better sanitation than he has in his home. It can be worked by a child as perfectly as by the strongest man. With it there is no restriction of the comforts of the bath or dressing room. Perfect cleanliness and sweetness are assured, as it immediately and automatically discharges overboard every particle of refuse matter. Some of the best yachts, like the *Corsair,* the *Nourmahal,* the *Aphrodite,* the *Virginia,* find it a benefit."

For Steam Making Refrigerating Apparatus

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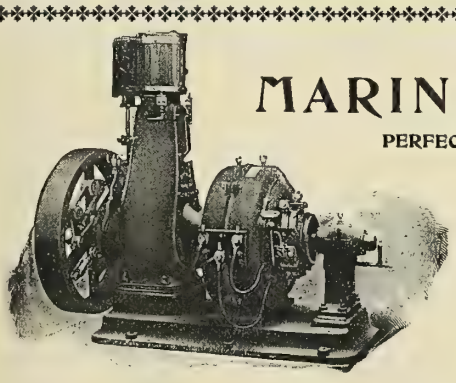
For All Engineering and Manufacturing Purposes

SENDING SAILS TO AUSTRALIA.—Reference was made in these columns recently to orders for sails sent from Australia and New Zealand to Wilson and Silsby, Boston, Mass. So many of the yachts fitted with these sails have won races that Wilson and Silsby continue to receive orders from that distant corner of the world, an order having just been received from West Australia.

PAINT TO PROTECT STEEL.—In a paper recently read before the New York Railroad Club, W. S. Morris, in discussing the subject of painting steel, made the following statement: "It is presumed that those handling steel have by this time come to the realization that protection from weather and acid attacks is necessary. It may not be generally known that some forms of lead paint swell in the presence of sulphur, and, in swelling, increase in volume about one-third, thus tending to peel off. It seems to me that the parts of steel exposed to sulphur or sulphurous smoke ought to be painted with graphite and purest linseed oil, the inert graphite tending to protect the steel, perhaps on account of the minute flakes lapping over one another like the shingles on the roof of a house." The Joseph Dixon Crucible Company, Jersey City, N. J., manufactures a paint covering exactly the points made by Mr. Morris. This paint is known as Dixon's Silica Graphite Paint, which has been used for many years, not only in railroad work, but on steam vessels, wharf buildings, etc.



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Chicago: Fisher Bldg. Boston: Weld Bldg. St. Louis: Security Bldg. Baltimore: Maryland Trust Bldg.

SPRAGUE COMPANY ORDERS.—The Sprague Electric Company, 527 West Thirty-fourth street, New York, is achieving much success in securing many important contracts for its motors and generators, and both its factories are rushed to the utmost. In addition to its foreign orders and many orders for small-size apparatus, it has recently made sales in Hannibal, Mo., seven 35-H.-P. motors and eight 15-H.-P. motors; Northampton, Pa., one 30-H.-P. motor and two 35-H.-P. motors; New York city, fifteen 10-H.-P. motors, seventeen 25-H.-P. motors, and one 50-H.-P. motor; Wellston, O., one 300-K. W. belted generator, one 230-H.-P. motor, and six smaller motors; Kansas City, three generators; Brooklyn, one 150-K. W. split-pole engine-type generator; Washington, D. C., contract for ventilating plant, including one 5-H.-P. motor and one 10-H.-P. motor, two 15-H.-P. motors, and eight 20-H.-P. motors, together with many other orders calling for about seventy-five motors and generators, a dozen or so hoists, and other apparatus.

ORDERS FOR BOATS.—The Greenport Basin and Construction Company, Greenport, L. I., advises us that it has received a contract for two 30-foot and two 21-foot launches complete with engines, boiler, and pumps; two 30-foot sailing pinnaces, four 24-foot cutters, two 23-foot gigs, two 15-foot dinghys, to be used on the two Mexican gunboats now under contract at the Crescent Shipyard, Elizabeth, N. J. All the engine and boiler work will be done at the company's machine department, the Greenport Engine and Machine Company.

CHANGE OF LOCATION.—Westinghouse, Church, Kerr and Company announce the removal of their New York office from the Havemeyer Building, 26 Cortlandt street, New York city, to the Maritime Building, 8 to 10 Bridge street, opposite new Custom House and near Bowling Green. The change is the result of a largely increased business. Three floors, the first, second, and third, will be devoted to their uses. The new quarters will afford about double the floor space available in their present location.

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"BENEDICT-NICKEL" Seamless Condenser Tubes are the only tubes that are *not* readily effected by Electrolysis.
"Benedict-Nickel" is an alloy of nickel and copper. The tubing is stronger, tougher and denser than any other. By hot rolling a solid cylindrical billet upon a forming mandrel, it is made like a twist gun barrel.
Send for treatise, "Electrolysis of Condenser Tubes," which gives full scientific reasons for the superiority of "Benedict-Nickel."
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A Word to the Wise

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Big and little—for manhole, handhole and pipe fittings.
One grade—the best we can make.
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McCord & Co.

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1471 Old Colony Bldg., Chicago

CLEVELAND PNEUMATIC TOOLS.—The plans for the new plant of the Cleveland Pneumatic Tool Company, Cleveland, O., are completed. The company has just opened up an office at 411 Park Building, Pittsburg, Pa., represented by Charles L. Nelson, and at 34 Lemoine street, Montreal, Canada, represented by N. J. Holden and Company. The contracts for the new plant have been awarded to J. A. Reaugh & Son, Cleveland, O. It is expected to have the plant completed and ready for operation in October. The plant will be equipped with the most modern machinery and appliances for turning out the largest amount of work in the shortest time.

THE MONTAUK STEAMBOAT COMPANY.—The Montauk Steamboat Company, Ltd., Long Island City, New York, which operates steamboats between New York city and the eastern end of Long Island, reports the most satisfactory season in the history of the company. This trip is one of the most popular trips out of New York, as the boats run along the north shore of Long Island the entire length of the island. The trips are so arranged that they can be taken one way by daylight and return by night. This company also runs steamers to Block Island, where connections are made with Providence and Newport, and at Greenport connection is made by steamer with New London.

TECHNICAL ADVERTISING.—R. D. Lillibridge, who opened an office at 20 Broad street, New York, two years ago as Systematist and Advertising Manager, has moved to larger and more complete quarters at 170 Broadway, where he announces that he is now fully equipped to handle technical advertising. In a circular announcing his removal, he states: "The real advertising manager takes care of advertising in its entirety; circulars, catalogues, trade papers—all. Yet few businesses need, or can consistently afford, the undivided attention of a good advertising manager; therefore their advertising manager may just as well be employed by other non-competitive concerns, provided enough clerical assistance is available to turn out all the work satisfactorily."

VESSELS RECENTLY CLASSED.—Among the vessels classed and rated by the American Bureau of Shipping in the "Record of American and Foreign Shipping" recently are: American screw *Kroonland,* American barkentine *Emita,* American schooner *Perry Setzer,* American screw *San Jose,* American schooner *M. C. Haskell,* American three-mast schooner *Charles H. Wolston,* American three-mast schooner *Jennie S. Hall,* American three-mast schooner *Herald,* American three-mast schooner *Ann J. Trainor,* American three-mast schooner *C. C. Wehrum,* American three-mast schooner *Alice Lord,* American three-mast schooner *Alice M. Davenport,* American three-mast schooner *William T. Moore,* British schooner *Malden,* British schooner *Eduardo,* British screw *Ferrona,* British three-mast schooner *Strathcona,* British three-mast schooner *Damaraland,* and Swedish bark *Dan.*

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Voltmeters, Ammeters, Millivoltmeters, Voltammeters, Milliammeters, Ohmmeters, Portable Galvanometers, Ground Detectors and Circuit Testers.

Our Portable Instruments are recognized as **the standard** the world over. Our **Voltmeters** and **Ammeters** are unsurpassed in point of extreme accuracy and lowest consumption of energy.

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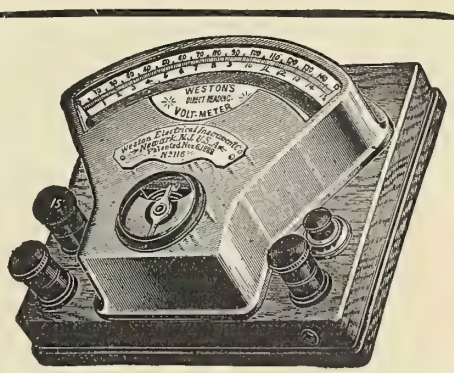

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For Ships and Fortifications

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General Manager

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The Matter of Lubrication.—It is within the memory of the youngest of us that the old-time tallow cup, made by a well-known house of Philadelphia, Pa., was almost the sole device for feeding tallow (which was the proper thing at that time) to valves and cylinders of marine engines, and gave satisfaction as far as it went. Twenty years ago there were very few sight-feed lubricators to be found on marine work around the harbor of New York. Of course there were a few double connection, and more recently an improvement by two single-connection designs, and a few of these first single-connection cups are still to be found in use among the tugs, but later the Couse flush method single-connection sight-feed lubricator, devised and patented by Charles Couse, then owner and engineer of the *John S. Stevens,* which was well known as one of the big-little boats of the time, came on the market. It is needless to say that it was a go, even at the price, which was $35 for pints and $45 for the quart sizes. It was sold on its merit and was a winner from the start. It was not long before it seemed as though almost every boat in the harbor had a Couse lubricator, and they are still going on, as the records will show. At the start it immediately found its way from one tug to another, and it is safe to state that no other small labor-saving device (for it was labor to keep punching tallow into an engine every few minutes) probably ever made more friends among the engineers and held them longer than the Couse flush method sight-feed lubricator. Our navy has adopted them as well as our merchant marine. Many of the same patrons and engine builders who purchased them from the start are still using them. Among the many reasons why the Couse cup has been so particularly successful among marine engineers is the fact that it is a single-connection cup, and the claim is also made that it is a single-connection cup that is absolutely reliable. On account of its construction it is exceptionally convenient for the marine engine room, which is generally limited in space. The one connection places the lubricator where it is most easily reached and directly under the eye of the engineer at the throttle, and at the same time it is out of the way. The lubricator taking steam for hydrostatic purposes and feeding the lubricant through the single-pipe connection, which is never more than 6 to 10 inches long or high, naturally does away with a long line of piping through the engine room to the boiler or steam gage. The cup is a quick worker and is not affected materially by extreme heat or cold, and will work under high or low temperature. Besides this the cup takes less oil to do the same work than many other lubricators, on account of its compounding oil and water in the feed passage before going directly into the steam. This cup is composed of very few parts, and these have never been better made than by its exclusive manufacturers, The Eastwood Wire Manufacturing Company, Belleville, N. J. Orders can be filled at any supply or ship chandlery store, or from the office of Charles Couse and Company, 39 Cortlandt street, New York city, and also from its makers, the Eastwood Company.

A Valuable Book Free.

The story which recently appeared in Marine Engineering, entitled "The Professor on Shipboard," has been published in book form, making a handsome volume of over one hundred pages.

Every subscriber who will secure a new subscriber for Marine Engineering and remit the price of the year's subscription ($2, domestic; $2.50, foreign) will have sent to him, *free,* a copy of this book. If not a subscriber, it takes two new subscriptions besides your own to win a book.

Nothing has ever been published which contains so much every-day information which every engineer ought to know, as this book. Therefore, no working engineer or man connected with marine work can read any book which will be of such value to him. In addition to the practical information it contains, it is a most readable story of life at sea.

Briefly told, the story is of a college professor of engineering, who has many excellent ideas, some of which are rather *theoretical,* who makes the trip to Brazil and back with his brother, who is Chief Engineer of a steamship, and who has had much *practical* experience. The discussions bring out some strong points which will deeply interest every man who has anything to do with a steam plant.

The table of contents is as follows:

Chapter I.
In the Fireroom.
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Chapter IX.
How to Use Indicators.
Chapter X.
Simple Explanation of the Indicator.
Chapter XI.
Overhauling the Machinery.
Chapter XII.
Painting the Pipe System.

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" 95, A. P. Jerguson, Box 198, Key West, Fla.
" 100, Thos. Sullivan, Honolulu, H. I.
" 101, Thos. J. Hanlon, Box 765, Norfolk, Va.
" 102, Fred W. Linsemeyer, 210 Clinton St., So. Haven, Mich.
" 103, Herbert Parkins, New Berne, N. C.

TRADE PUBLICATIONS.

The Mianus Motor Works, Mianus, Conn., have issued a leaflet addressed to owners of gasoline engines or to those who are about to purchase one. Therein are described specialties made by this company, including sparking magnetos, water-cooled mufflers, spark points, generators or vaporizers, throttle valves, cylinder oil and grease, etc.

The Judkins Company, East Providence Center, R. I., announces in its handsomely-illustrated catalogue that it is prepared to turn out speed launches, pleasure boats, and, in fact, small boats of any type. The company makes a gas engine of its own, and has the agency for the Motor De Luxe, the Buffalo, the Toquet, Lozier, and Stiles motors, and will furnish customers speed boats equipped with any of these motors.

The Durable Wire Rope Company, 288 Congress street, Boston, Mass., has issued a catalogue describing the process of manufacture and the different styles of Durable cables used for elevators, hoisting, stevedoring, drilling, haulage, dredging, ship rigging, towing-hawsers, etc. The requirements for each of these services are such that a special form of cable is made for each. Prices and dimensions of these various kinds are included in this little booklet, copies of which may be had upon application.

An "at home" booklet is being distributed by the American Blower Company, Detroit, Mich. The purpose of this booklet, as is stated on the first page, "is to acquaint our friends and patrons with our unequaled manufacturing facilities." The booklet contains pictures showing the vast extent of the shops of this company; also interior views showing where the engines are built, where the blowers are built, the heater and the pipe-connecting departments, the exhaust fan and wheel shops, pattern and blacksmiths' shops, galvanizing shop, storage house, power plant, drafting room, etc.

The Metropolitan injectors, manufactured by the Hayden and Derby Manufacturing Company, 85 Liberty street, New York city, will be found fully described and excellently illustrated in a 48-page catalogue which is now being distributed. The five specialties of this company are the Metropolitan automatic injectors, Metropolitan "1898" injectors, Metropolitan double-tube injectors, Hayden-Derby ejectors and jet apparatus. In addition to descriptions of the several specialties, the catalogue contains a great deal of useful information relating to injectors and ejectors. Copies can be had free by referring to MARINE ENGINEERING.

Electrically Operated Valves is the title of special catalogue E, which is now being distributed by the Chapman Valve Manufacturing Company, Indian Orchard, Mass. This catalogue will be particularly interesting to those of our readers interested in steam-power plants and dry-docks, as these are among the special uses for which these valves are recommended. The catalogue is 5 by 8 inches in size and comprises 38 pages. In addition to the text, there are a number of small engravings, giving full detail of the valves and of the members used in connection with them, together with a number of full-page engravings showing very clearly the operation of these valves.

The Lunkenheimer Company, in the revised August edition of its new catalogue, has published a book which will be of much value to steam users and steam fitters. This is the revised edition of the '98 catalogue, and many new specialties will be found described. Space does not permit us to mention the various brass and iron fittings made by this company, but they include valves of every description—angle, globe, pocket, blow-off, gate, radiator, check valves, etc.; whistles, meter cocks, water gages, pressure gages, injectors, lubricators both hand and automatic—in fact, lubricators is one of the most important features of the line of goods carried by this company. Dimensions of valves are given in convenient tables. The book will be found of great use, and copies may be had by interested parties who write to the company at the home office in Cincinnati, or at the branch office, 26 Cortlandt street, New York

When writing to advertisers please refer to MARINE ENGINEERING.

Electric Supplies is the title of a new catalogue issued by the H. W. Johns-Manville Company, 100 William street, New York city. This book contains 108 pages and includes a full line of heaters, rail bonds, overhead line materials, 500-volt fuses, vulcabeston, and special molded insulating pieces, together with many new articles. The value of this catalogue is increased by a comprehensive alphabetical index.

A compact gasoline engine manufactured by August J. Fritz, 185 West Main street, Rochester, N. Y., is described in a leaflet recently issued. The maker builds open and cabin boats, yachts, and launches, besides this marine gasoline engine. A specialty is also made of knockdown construction. Skeleton parts of boats, castings for engines, and fittings, together with drawings to work from, can be supplied.

The Crandall Packing Company has just issued a new edition of its catalogue which is more complete and comprehensive than those previously issued by this company. It measures 6 by 3 1-2 inches, contains 32 pages, and illustrates and describes various kinds of Crandall packing—namely, hydraulic coil, expansion rings, sectional ring, expansion coil, high-pressure ring, etc., etc. The company also manufactures a line of round and flat gaskets, packing, etc. Copies of this catalogue may be had by addressing the home office, Palmyra, N. Y., and the New York office, 136 Liberty street.

The August bulletin No. 1 of the De Laval Steam Turbine Company, 74 Cortlandt street, New York city, describes the test of a 300-horse-power turbine dynamo. The turbine tested was used for driving two direct-current electric generators. The bulletin states that the tests were conducted with both saturated and superheated steam. The latter at full load required but 13.94 pounds of water per break horse power per hour, and at 56 per cent. of the load 15.53 pounds. The comparison of the two tests shows that a little over one pound of steam is saved by superheating. This bulletin is a valuable contribution on the general subject of steam turbines. Copies of it can be had by applying to the company.

"Steam Economy with Highest Efficiency" is the title of a folder issued by the Sleeper Engine Company, Ltd., Montreal, Canada. This engine, in external appearance and in principle, is entirely different from other engines on the market. It is a reciprocating engine, differing, however, from the ordinary engine of this type in that the expansion chamber, which takes the place of the cylinder, has a flexible wall, made up of two parts connected by a crank, the whole member being attached to a crank shaft by a connecting rod. Steam is admitted to the chamber by a valve, giving to the flexible wall an outward movement which actuates the crank shaft or, in one design, a crank eccentric. This interesting engine, which is made either simple or compound, is well described and illustrated in this folder. The machine was tested by the McGill University, of Montreal, with satisfactory results.

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25 cards, about 8x10 inches in size, on each of which is worked out diagrammatically some special part of engines of different powers, such as thickness of cylinder walls, diameter of piston rods, area of port openings, etc.

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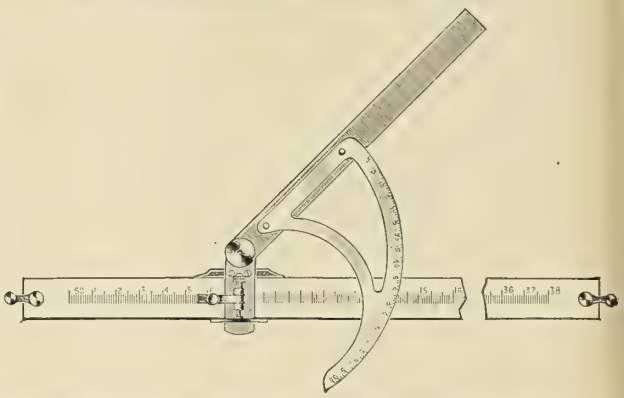

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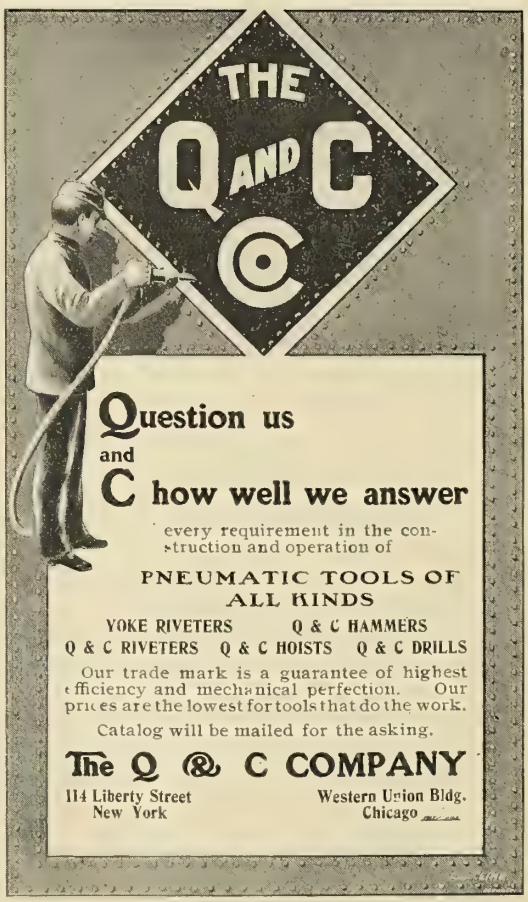

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Direct-Current Factory Motors and Small Generators is the title of a handsomely-illustrated 16-page catalogue issued by the Rochester Electric Motor Company, Rochester, N. Y. The details of these machines are illustrated and described, and the illustrations are given of various types of motors. There is also included a list of sizes for different speeds, horse powers, and voltage.

Catalogue No. 12, entitled, "Duplex Drill Lathes, Hand Lathes, Slide Rests, and Spring Coilers," has recently been issued by the Garvin Machine Company, Spring and Varick streets, New York city. Therein are described and illustrated the above-named machines, which are made by this company. There are also given dimensions, floor space required, shipping weight, etc., of each of these machines.

A new model of profiling machines is being put on the market by the Pratt and Whitney Company, 136 Liberty street, New York city. This machine is handsomely illustrated and fully described in a 10-page booklet, printed in two colors, which is now being distributed. Each special feature of the machine is fully explained, and there are specifications of the one-spindle and also of the two-spindle machine, together with such other information as any purchaser would be liable to want.

A short story of Sir Henry Bessemer is published by Wyman and Gordon, Worcester, Mass. A sketch of this great man's life is called by some a "Romance of Inventions." The name of Bessemer is known the world over, but there are probably few people who know what hardships this man had to contend with. The publishers of this pamphlet make forgings of all kinds, one of their specialties being duplex steel forgings turned out by drop hammer, steam hammer, or hydraulic press.

The Fort Wayne Electric Works, Incorporated, Fort Wayne, Ind., have recently issued bulletin No. 1,030, describing single-phase generators. Each member of the machine—namely, the framing, coils, armature, brush mechanism, commutator, etc.—is taken up in turn and illustrated and described. The machines are made on the Wood system, and many of them have been installed, as can be seen by referring to the list published. A table of the general dimensions of the alternators is given.

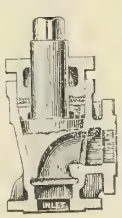
The Perfected Ship Log is the title of a handsome catalogue issued by the Nicholson Ship Log Company, Cleveland, O. This machine is operated hydraulically or by the varying level of water in a vertical pipe which has two sea connections, the level of the water changing with the speed of the ship. The recording mechanism is operated by a clock which consists of a revolving drum over which travels a pencil point, recording the speed at each hour. There is also a counter which adds up the total number of miles traveled, and an indicator showing at what speed the ship is traveling. The catalogue will prove of much interest to the maritime world generally.

WATCH THIS SPACE FOR OUR NUMEROUS SPECIALTIES.

WALWORTH MFG. CO. TOOLS and SUPPLIES for STEAM WATER and GAS USERS BOSTON MASS.

THE BOILER BLOW OFF VALVE "NEVER STICK"

Opens or closes easily under pressure.
Large ports. Discharges through plug.
Chances of plug or body being cut by scale or grit reduced to a minimum.
Made very heavy and strong.
Pronounced taper of plug provides for lasting adjustment.



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SPECIAL DESIGNS BUILT FOR ALL REQUIREMENTS

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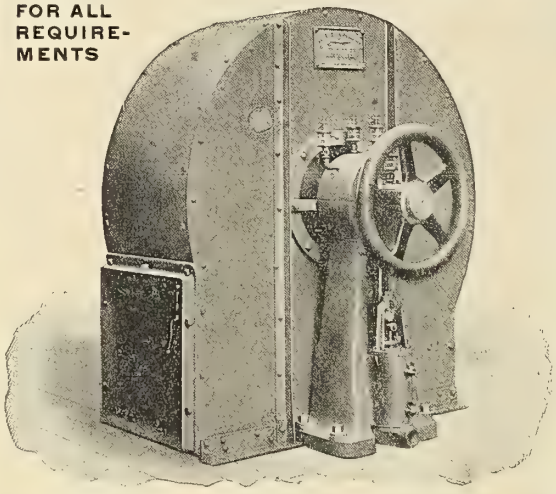

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Generally know that the only white pigment that will stand marine exposure is

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FREE: Our Practical Pamphlets

"The Paint Question," "Paints in Architecture," "House Paints: A Common Sense Talk About Them," "French Government Decrees."

The Manville Fire Extinguisher is the name of a new article now being put on the market by the H. W. Johns-Manville Company, 100 William street, New York city. The extinguisher, which is in the form of a powder, is described in a booklet issued by the company. This powder, it is stated, is non-poisonous, will not freeze nor cake in the tubes, is not affected by dampness, and will not deteriorate with age.

In the department of Science and Technology, Pratt Institute, Brooklyn, N. Y., there is conducted a two-year technical course in steam and machine design and applied electricity. These courses are intended for those to whom a four-year college course in engineering would be impossible on account of lack of time or money, and who need some technical training before entering mechanical or electrical work. Starting with low requirements for admission, there is given thorough training, theoretical and practical, in mechanical drawing, machine design, shop practice, machine construction, steam engineering, and electricity. Evening technical courses are conducted. Further particulars and circular of information may be had by addressing Arthur L. Willister, director of the department.

The Mason hand lathe is illustrated and described in a handsome 16-page catalogue recently issued by the Kemp Machine Works, 246 Plymouth street, Brooklyn, N. Y. This little machine is capable of doing much work which has heretofore been assigned to expensive power tools, is light and durable, weighs but little over 100 pounds, and is sold for a very low figure. With one man's power it is claimed to cut a thread from 1 to 2 inches and from 2 1-2 to 6 inches, inclusive, at the standard taper. It can be used for cutting pipes and threads, and does work accurately. Many of these little machines are used on board the American, Russian, German, and British warships, and Admiral Melville and other members of the Navy are quoted as highly recommending it. Copies of the catalogue may be had by addressing the manufacturers and mentioning Marine Engineering.

Yacht Design is the title of an attractive leaflet issued by George Crouse Cook, naval architect, 15 Whitehall street, New York city. It contains a few well-selected remarks on the principles of yacht design, takes up the general features of steam and sail yacht design, the methods of construction, cost, etc.

The Universal double-tube injectors, manufactured by L. Schutte and Company, Philadelphia, Pa., will be found fully described in a catalogue which this company is now distributing. The injector is described in much detail, and a number of illustrations are given, and sectional views of all injectors with pipe connections.

The Standard improved drill chuck is described in a leaflet issued by the Standard Tool Company, Cleveland, Ohio. The features claimed for this chuck are that it has no projecting jaws, the working parts are of generous dimensions, the jaws and screws are of cast steel, carefully tempered and of uniform quality, and that the jaws are guided by three large gibs. These drill chucks are made in five sizes ranging in size for holding tools of from 1-4 to 1 inch in diameter.

Direct-current belted generators and motors of the Wood systems are described in bulletins Nos. 1,025 and 1,032 issued by the manufacturers, the Fort Wayne Electric Works, Incorporated, Fort Wayne, Ind. Details of the armature core and coils, brush holders, commutator, frames, etc., are given, and each member is described. Tables of dimensions and capacities of machines are also included. We presume copies of the bulletins may be secured by writing to the company and mentioning Marine Engineering.

The Industrial Press, 9-15 Murray street, New York city, has now ready for distribution section A of the Mechanical Index, comprising machine tools, metal-working machinery and accessories, including machinists' small tools, etc. The complete work is intended as an encyclopedia and list of manufacturers in the United States of mechanical appliances and tools operated by steam, electricity, water, air, hand or foot power, carefully arranged in sub-headings for quick reference. The price of the book is given as $1.

Catalogue No. 29, describing the Hunt cable railways, has recently been issued by the C. W. Hunt Company, West New Brighton, New York. This system of railways has been installed by large consumers and handlers of coal, ore, and other bulk matter. Some interesting and large systems are described in the catalogue, copies of which may be had upon writing to the manufacturer.

Transportation of material through manufacturing establishments is an important problem for the general manager. The C. W. Hunt Company, whose New York address is 45 Broadway, has devoted much attention to this problem, and has developed a system of industrial railways and car equipment to meet the demands of the various kinds of factories. Bulletin No. 0216 describes and illustrates the system of shop transportation.

In St. Louis much attention is being paid to the system of oil burning, and the National Oil Burner and Equipment Company, with offices in the Carleton Building of that city, is attacking several sides of the problem. The company has placed on the market oil burners for domestic uses, for welding furnaces, and for boilers. The piping arrangement in one of these systems is illustrated in a circular recently published by the company.

A striking illuminated sheet is being distributed by the Peerless Rubber Manufacturing Company, 16 Warren street, New York city. It is a view of the lower part of New York, taken from the river, showing the numerous skyscrapers in the background, and the steam craft of various types in the foreground. It is stated that the steam plants in both buildings and ships which are shown are packed with this company's Rainbow Packing.

BUSINESS NOTES.

TO BUYERS OF ENGINEERING BOOKS.—The Derry-Collard Company, 256 Broadway, New York city, has opened extensive offices to make a specialty of supplying engineering books for any line of work. In a neat circular the company states that it does not propose to take the book buyer's money whether or not he is satisfied with the books. All the company asks is that those who wish to buy books or to examine books referring to any subject notify this company. The prospective buyer can examine the books, and, if he wants them, pay for them. If not, he can send them back. The circular states: "You can have any technical book, published by any one anywhere, costing a dollar or more, on approval for two or three days, so that you may examine it thoroughly, on these terms. There are no strings to this proposition; the things are placed in your hands on honor; there's no game of references from your pastor, no hesitation whatever in placing these things in your hands on trust."

MECHANICAL THERMOMETERS

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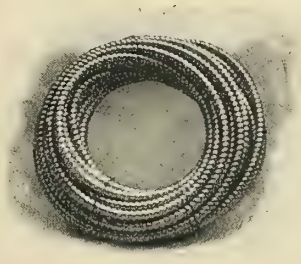
A LAUNCH FOR BOMBAY.—Last month the International Power Vehicle Company, Stamford, Conn., shipped to Bombay, India, a 21-foot launch equipped with one of its kerosene-oil engines. The launch has been purchased for an English official, and will be the only boat of its kind in the vicinity of Bombay. It will be forwarded by way of Genoa and the Suez Canal. When the company began operations, a year or so ago, a force of eight or ten men was employed. To-day the working force numbers about 60 men, and the prospects are that this number will be added to continually. Engines are now being made ready for shipment to Bombay, Calcutta, Singapore, Rangoon, Penang, Manila, Hong Kong, Shanghai, Tien-Tsin, and other places near the equator.

A FINE CATALOGUE FREE.—The Waterbury Brass Company, 122-130 Center street, New York city, has now ready for mailing a new stock catalogue, and any of our readers wishing a copy can have one free by mentioning MARINE ENGINEERING. This catalogue covers very fully the subjects of brass, copper, bronze, and German silver in sheets, rods, and wire; also brass and copper seamless drawn tubing. All these goods are carried in stock in large quantities in this company's warehouse. The catalogue also has much to say regarding stair treads, moldings, brass ferrules, and checks. One important feature of the catalogue are the complete tables of weights and measures bearing on brass and copper sheets, rods, wire, and tubing.

FLEXIBLE METALLIC CONDUIT

For Modern Electric Wiring



Our Flexible Metallic Conduit, Flexible Steel Armored Conductors, and Steel Armored Flexible Cord are particularly well adapted to all classes of Marine work. They afford thorough protection to the wires and insulation from rodents, mechanical and other injuries, are water-proof and simple to install.

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SPRAGUE ELECTRIC COMPANY

General Offices: 527-531 West 34th Street, New York

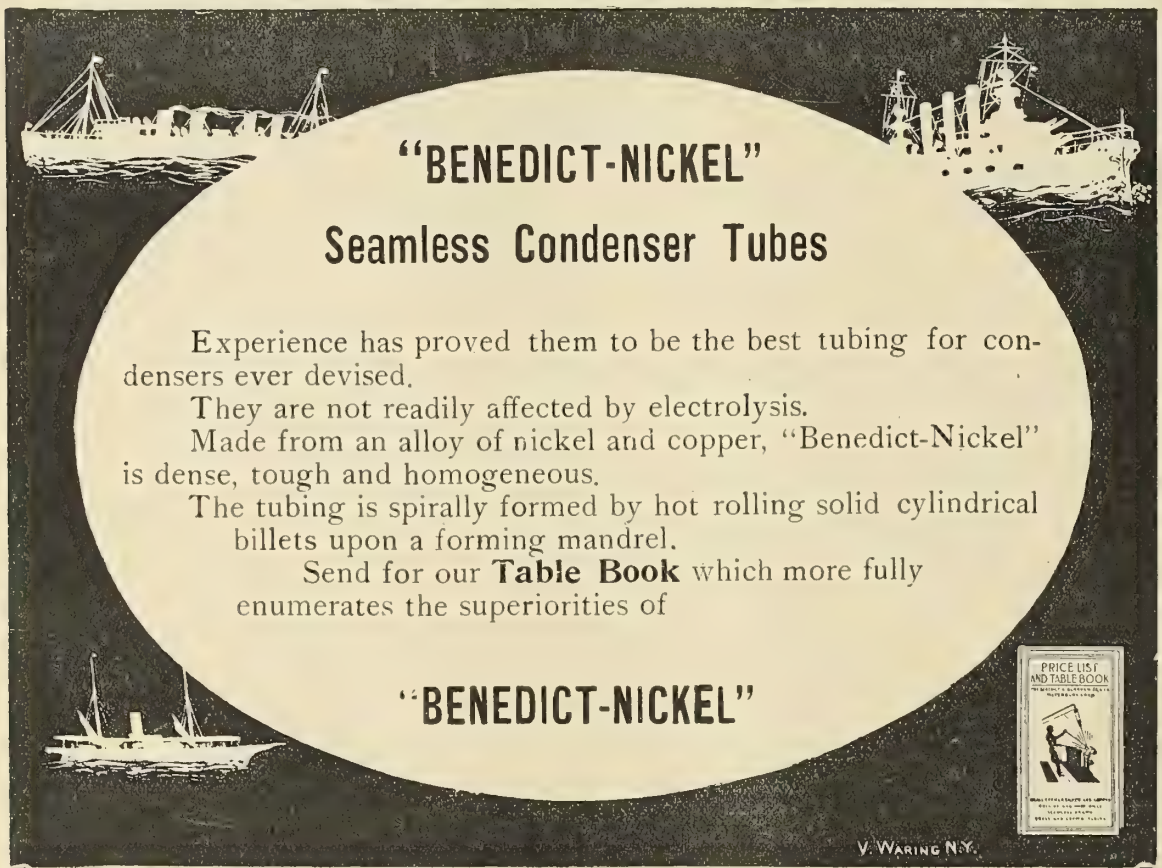
Chicago: Fisher Bldg. Boston: Weld Bldg. St. Louis: Security Bldg. Baltimore: Maryland Trust Bldg.

Marine Refrigerating Machines.—Owing to the increased demand for refrigerating and ice-making machines, the Brunswick Refrigerating Company, New Brunswick, N. J., has built and equipped a new factory. The company has just moved into the new plant, and, with the increased facilities, is now prepared to do all kinds of refrigerating work, both land and marine.

Staybolt Iron.—We are informed by the Falls Hollow Staybolt Company, Cuyahoga Falls, O., that its customers are reporting the best of satisfaction with this company's staybolt iron, both hollow and solid. The company has customers among marine and other boiler manufacturers throughout all parts of the United States, and is shipping large orders to Mexico, Canada, Japan, and nearly all the countries of different corners of the world. The company has just employed Mr. T. F. De Garmo, 3116 Clifford street, Philadelphia, Pa., as its Eastern representative. Mr. De Garmo has had many years' experience in the supply business.

Pneumatic Tools.—The pneumatic tools used in riveting the hulls of the *Kroonland* and *Friesland*, the two new steamships built at the yard of Wm. Cramp and Sons' Ship and Engine Building Company, Philadelphia, Pa., for the International Navigation Company, were supplied by the Chicago Pneumatic Tool Company, Chicago, Ill. The requirements in the way of riveting were very severe, as the plates used in the hulls of these ships are the heaviest yet made use of in the shipyards of this country.

Submarine Paint for Battleship Maine.—Just before her trial trip, last month, the battleship *Maine* was placed in dry-dock in the Brooklyn Navy Yard, to be painted and cleaned. The builders, naturally, desired to make as high a speed record with this ship as possible, and we are informed that she was carefully coated with American-McInnes composition, furnished by George N. Gardiner and Son, 53 South street, New York city; these compositions being used as they make a very smooth sailing surface, and, consequently, give opportunity to make high speed.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Experience has proved them to be the best tubing for condensers ever devised.
They are not readily affected by electrolysis.
Made from an alloy of nickel and copper, "Benedict-Nickel" is dense, tough and homogeneous.
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We are also among the largest manufacturers of Seamless Brass and Copper Tubing (made by the same process as "Benedict-Nickel"), and of brass and copper sheets, wire, etc.

TOBIN BRONZE.—We sell it at manufacturer's prices.

BENEDICT & BURNHAM MFG. CO.,

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New York, 253 Broadway. **Boston, 172 High Street.**

Peerless Packing.—In a recent letter to the Peerless Rubber Manufacturing Company, 16 Warren street, New York city, Asa P. Hyde, Binghamton, N. Y., wrote as follows: "By to-day's U. S. Express I send you three of the four rings of 'Peerless Packing' taken out of Corliss engine piston gland (one I wish to keep to show to packing men and engineers). The same was applied January 28 last, and has run continuously for 10 1-2 hours each day since, giving not the slightest trouble, packing perfectly, running the lightest of all. Of all others tried before, and I have tested many, they would not run to exceed ten to twenty days. Yours went on where the others had left off, with no changes, and made the record. Was good for much more, but other repairs caused the change now. Piston speed, 560 feet per minute; steam pressure, 80 pounds; piston travel one day, 352,800 feet; piston travel 133 days' run, 46,922,400 feet, and good yet."

A Word to the Wise

"McKIM GASKETS"

The long-wear kind. Made of packing encased in soft annealed copper.
Can be reapplied indefinitely.
Big and little—for manhole, handhole and pipe fittings.
One grade—the best we can make.
Prices and catalog on request.

McCord & Co.

104 Broadway, New York
1471 Old Colony Bldg., Chicago

Large Valves.—In a recent issue, one of the Springfield (Mass.) papers stated that the Chapman Valve Manufacturing Company, Indian Orchard, Mass., has received from the Newport News Shipbuilding and Dry-dock Company an order for the largest brass valves the company has ever made. These valves are eight in number and are to be used on pipe of 20 inches and 21 inches inside diameter. They are made entirely of Government bronze, and when completed will weigh 1,800 pounds each. These valves are to be used on vessels being built at the Newport News yard as follows: *West Virginia, Maryland, Virginia,* and *Charleston.*

Foster Steam Specialties.—We are informed by the Foster Engineering Company, Newark, N. J., that the annual report of Rear Admiral Melville, of the United States Navy, shows that during the year 1901 the Foster Company furnished to the Engineering Department of the Navy automatic valves and reducing and regulating valves to the aggregate weight of 17,683 pounds. In addition to these orders, the Foster Company has recently filled many other large orders, the Lamson Consolidated Store Service Company taking 186 valves; the Consolidated Heating Company, 45; and many other concerns well known in the industrial world, other large orders.

Ship Fittings.—The increasing demand in the United States for first-class fittings for ships of all types and descriptions has led to the recent organization of The Delaware Marine Supply Manufacturing Company, Wilmington, Del. The authorized capital stock of the company is $100,000. The officers are: C. F. Petersen, president; Louis Werliin, treasurer; C. L. Bonham, secretary; and A. C. Layman, manager, men of experience in marine work, who have equipped the plant, consisting of a brass foundry, brass finishing department, machine shop, forge shop, and pattern shop, with modern tools especially adapted for economical manufacturing. The factory buildings are completed, the machinery installed, and the company has begun to fill orders.

To Build Lighthouse Steamer Crocus.—The Lighthouse Board has awarded the contract for the construction of the twin-screw steel steam lighthouse tender *Crocus* to the Townsend-Downey Shipbuilding Company, New York, builders of the German Emperor's schooner yacht *Meteor.* This vessel will be constructed throughout of steel, with five water-tight bulkheads. The deck house on the spar deck will be built of wood in the most substantial manner. The vessel will have two masts with gaffs and necessary booms. The propelling power will be furnished by two boilers of the gunboat type, 9 feet 7 inches in diameter, 16 feet long, furnishing steam for two vertical inverted direct-acting fore-and-aft compound engines with cylinders 18 inches and 34 inches in diameter, and a common stroke of 26 inches, driving left and right-hand propeller 7 to 8 feet in diameter. The *Crocus* will be finished in detail in the best possible manner, and when completed will be one of the finest steamers in the lighthouse service.

WESTON STANDARD PORTABLE DIRECT-READING

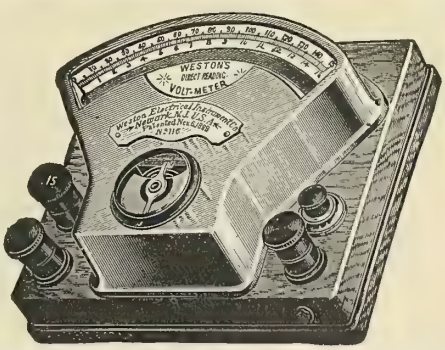
Voltmeters, Ammeters, Millivoltmeters, Voltammeters, Milliammeters, Ohmmeters, Portable Galvanometers, Ground Detectors and Circuit Testers.

Our Portable Instruments are recognized as **the standard** the world over. Our **Voltmeters** and **Ammeters** are unsurpassed in point of extreme accuracy and lowest consumption of energy.

WESTON ELECTRICAL INSTRUMENT CO.,

Waverly Park, Newark, N. J., U. S. A.

BERLIN:—European Western Electrical Instrument Co., Ritterstrasse 88.
LONDON:—Elliott Bros., 101 St. Martin's Lane.



WESTON Standard Portable Direct Reading Voltmeter.

Oil Fuel Under Marine Boilers.—In a recent letter to Tate, Jones, and Company, Incorporated, Empire Building, Pittsburg, Pa., Charles G. Coyle, the president of the Louisiana Petroleum Company, New Orleans, La., stated: "In reply to your inquiry concerning the *Tempest*, we beg to advise that the fuel oil installation erected on this tug by you has proven entirely satisfactory. The boat makes more steam, at a material reduction in the cost of the fuel. The pumping appliance has worked perfectly from the very start, and we have not had a moment's delay, although we have been driving the boat day and night for over two months."

Iron and Steel Sheets.—The Empire Iron and Steel Company, Niles, O., has just built and equipped a large plant. The product will be sheet iron and sheet steel, and angles for light structural work. The company has six hot mills, two cold mills, and a 3-high, 24-inch bar mill. It will manufacture iron and steel sheets up to 60 inches wide and from No. 16 to No. 30 gage. It will make a specialty of "guaranteed" double-refined iron sheet, also Range steel and Bowsocket polished sheet. The galvanizing plant is now in operation. The output of iron and steel angles will be about 100 tons per day. For the present, the heaviest angles will be 4x4.

The Falkenau-Sinclair Machine Company.—The two well-known Philadelphia concerns, A. Falkenau and the Philadelphia Machine Tool Company, have combined their interests and businesses under the name of the Falkenau-Sinclair Machine Company. The company has a large plant at 109-115 North Twenty-second street, and has largely-increased facilities in addition to those secured by combining the two interests. The specialty of the new company will be the designing and building of high-grade machine tools and special machines. At the same time, the company will have a full line of presses and machines for working sheet metals, etc.

The Ideal Pigment

TRADEMARK FEROX REGISTERED JULY 8, 1902.

The only adequate protection for Ships, Bridges, Structural Iron and Steel Work

Mohawk Paint & Chemical Co.

SOLE MANUFACTURERS OF

Patent Iron Oxide Paints

98% Pure

19 Liberty Street, New York

The only **Pure** Iron Oxide Paint.

The only Non-Crystalline Oxide of Iron

Being porous and spongy it absorbs and retains the oil and makes a permanent, durable, unchanging, protective coating for wood and metals.

It is rust-proof and not subject to chemical action.

Unequalled for submarine use.

SEND FOR DESCRIPTIVE CIRCULAR

REMINGTON

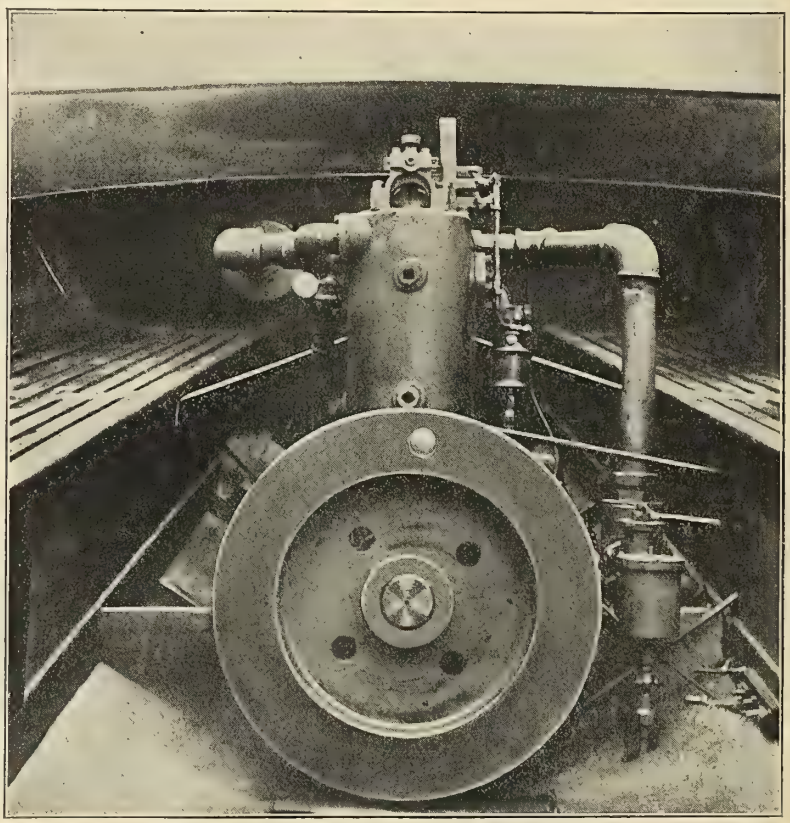
A Great Name
A Great Reputation
A Great Motor

2 Cylinder · 4 Cycle · Slow Speed

Write for prices now while we can fill your orders.

Remington Automobile & Motor Co.

UTICA, N. Y., U. S. A.



SPECIAL NOTICES.

Announcements under this heading will be inserted at the uniform rate of thirty-three-and-a-third cents a line. Lines average ten words each.

EXPERIENCED MAN SEEKS POSITION.

A foreigner experienced as engine designer and draftsman, and accustomed to the metric system, seeks position; has governmental certificate. Address DESIGNER care Marine Engineering.

FOREMAN BOILER MAKER WANTED.

First-class man wanted for a modern shop building marine and stationary boilers, and doing boiler and iron ship repairs. Applicants will please state age, experience, nationality, and give names of previous employers. This is a good position for a good man. Address P. O Box 2685, Boston.

EDUCATED AND EXPERIENCED MAN SEEKS POSITION.

AN ENERGETIC YOUNG MAN, College technical education; machinist; three years operating dredging machinery; chief-engineer's license for Great Lakes; experienced in indicator work and computation and competent draftsman on detail work; would like a position with some firm manufacturing marine engines or dredging machinery, with chance for advancement. Address J. M A., care Marine Engineering.

FERROFIX FOR BRAZING.—The brazing of iron has long been the dream of inventors, and the recent discovery of the secret was hardly perfected before companies were organized for the purpose of selling the secret throughout the world. The original purpose was to manufacture the compound which makes the brazing possible and dispose of it to the users, but, because of the result of experience in this direction in Germany, the whole method had to be changed, for the reason that it was found that, by actually doing the brazing work, a great deal more money could be made with very little more trouble. Acting upon this idea and improving upon it, the American Brazing Company determined to buy out the American Ferrofix Company, together with all other right, title, and interest, so that it might organize and perfect a large and effective working force throughout the whole United States, in order to control the mending business of the country. The purpose is to have joined with it every responsible blacksmith in the country, so that, instead of one or two agencies in the towns and cities, as is being done in Europe, it will have an agency in every village almost throughout the United States. Statisticians assert that the broken castings in the United States every year amount in value to from ten to twelve million dollars, and the American Brazing Company anticipates being able to divide a large proportion of this among its agencies. A recent writer describes the process of brazing as carried out by the American Ferrofix Company as simple in the extreme. For experimental purposes a bar of iron was taken, of about 1 1-2 inches cross-section; at one point this bar was reduced in cross-section to 1 1-4 inches by filing on all four sides, so as to make a weak point at which the iron would readily break; it was thus broken with several blows of a hammer; and inside of fifteen minutes the two parts were brazed together; and the bar was then clamped in a vise, so that the brazed part would project about an inch from the jaws of the vise; it was then struck repeatedly with a hammer at this point until it broke again; but, instead of breaking at the brazed joint, as would have been expected, it broke a little higher up, and not exactly at the point where the cross-section was least, for this point was already occupied by the brazed joint. A second time the piece was brazed, and a third time it was broken. The third break was on the other side of the original braze, and so close to it that the thickness of metal was probably less than a fiftieth of an inch from the old braze. That is, the bar had been broken three times and brazed twice, but had not broken on the braze either time. The field for this new industry would seem to be almost endless. Broken machines that formerly reached the scrap pile can be carefully cleaned up and repaired. The buyers of broken down machines can reap a harvest if they reach a field where the use of Ferrofix is unknown. Among the prime movers in this company are the William S. Haines Company, 136 South Fourth street, Philadelphia, Pa.

SHIP AND PILE COPPERING.—A circular is being distributed by the Coleman Ship and Pile Coppering Company, State and Washington streets, Boston, Mass., which states: "The practical value of the inventions of George D. Coleman for coppering the bottoms of vessels has been very fully and satisfactorily demonstrated by actual work done during the past two years. The process consists in applying pure granulated copper to the hulls of ships, whether of wood, iron, or steel, and the surface, when finished, presents a coating of polished copper without break or seam. The method is less expensive and far more desirable in every way than using ordinary copper sheets, and requires but little more time than to apply a coat of paint. In adapting the Coleman process to vessels with iron or steel hulls, an intermediate coat of insulating material is introduced, which prevents all possibility of galvanic current being set up to the injury of the structure. When treating wooden piles by the Coleman process, the pile is first thickly studded with copper or yellow metal studs. These studs are driven by a rapidly-operating machine, designed and built by the company, leaving them slightly projecting from the surface of the pile. This surface is then treated in a manner similar to that of a vessel's bottom. The inventions are fully protected by various letters patent of the United States. All work done by the company will be fully guaranteed, both as regards its durability and excellence of workmanship. The company has a fully-equipped plant at Murray and Tregurtha's Wharf, West First street, South Boston, Mass. A similar plant is to be located at once at some convenient point in New York city. Estimates of cost and further details regarding the process may be had upon application at 96 Devonshire Building, 16 State street, Boston, Mass."

Cabins and Staterooms

of modern vessels especially those in the passenger service should demonstrate the supreme possibilities of the wood finisher's art.

This demands a special varnish, however, as atmospheric conditions are more destructive to varnish afloat than ashore and the ordinary article is of but little use.

The varnish best adapted to withstand the deleterious influences of wind, wave and weather is

Berry Brothers' Spar Varnish.

Further particulars and a unique marine puzzle sent free for the asking. Write us.

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Rainbow Packing

Makes Steam, Flange and Hot Water Joints Instantly

Thousands of Imitators.

No Equal.

Will Hold Highest Pressure.

Don't have to Use Wire and Cloth to Hold

RAINBOW

Can't Blow it Out.

THE COLOR OF RAINBOW PACKING IS RED

See that the Trade Mark (three rows of diamonds in black, connected) extends throughout the entire length of each yard or roll

WILL CARRY IN STOCK

It is an undisputed fact that Rainbow Packing is the only Sheet or Flange Packing in the world that will carry in stock for months and years without hardening or cracking

The Eclipse Sectional Rainbow Gasket

3/8 in.
1/2 in.
5/8 in.
} For Hand Holes.

3/4 in.
7/8 in.
1 in.
} For Extra Large Joints.

Fac-simile of a 6-inch Section of Eclipse Gasket showing Name and Trade Mark imbedded.

The Eclipse Gasket is red in color, and composed of the celebrated Rainbow Packing Compound. It will not harden under any degree of heat, or blow out under the highest pressure, and can be taken out and repeatedly replaced. Joints can be made in from three to five minutes.

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These Goods can be Obtained at All First-class Dealers.

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" 95, A. P. Jerguson, Box 198, Key West, Fla.
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" 101, Thos. J. Hanlon, Box 765, Norfolk, Va.
" 102, Fred W. Linsemeyer, 210 Clinton St., So. Haven, Mich.
" 103, Herbert Parkins, New Berne, N. C.

TRADE PUBLICATIONS.

"The Union Steam Specialties" is the title of a catalogue now being distributed by the Union Steam Specialty Company, Scranton, Pa. These specialties include indicators, separators, oil filters, shaking grates, furnace blowers, steam pumps, and a general line of engineers' supplies.

Draftsmen and others who have to do with drafting-room work will be much interested in a catalogue entitled "Printing on Tracing Cloth," issued by Golding and Company, 183 Fort Hill Square, Boston, Mass. This catalogue describes a compact printing press, designed especially for use in drafting rooms. Copies of the catalogue can be had free by mentioning MARINE ENGINEERING.

Users of paint will want to send for a copy of a booklet entitled "A Great Discovery—the Mohawk Paints," issued by the Mohawk Paint and Chemical Company, 19 Liberty street, New York city. There are many features about the Mohawk paints which will appeal to those who have made a study of the subject of iron paints. These features are brought out in a strong way in this catalogue.

The air tools manufactured by the Port Huron Air Tool Company, Port Huron, Mich., have a very complete and comprehensive catalogue devoted to them. A number of illustrations are given showing the men using the tools in connection with furnace and boiler work, and in addition to several illustrations of this kind, there are pictures of cranes, hoists, and other specialties which this company manufactures.

The dynamos and motors for all purposes manufactured by the Jantz and Leist Electric Company, 808 Elm street, Cincinnati, O., are illustrated in a series of sheets which the company is now distributing. These include generators, especially of small sizes, such as would be used in marine electric plants. This company also furnishes, when desired, complete plants for marine purposes, direct connected to steam engines.

Many publications have been issued by the passenger department of the New York Central and Hudson River Railroad Company, and now an illustrated catalogue of these publications, especially of books of travel and education, has been issued. Copies of this catalogue can be had free by addressing George H. Daniels, General Passenger Agent, New York Central and Hudson River Railroad Company, Grand Central Station, New York.

The Vulcabeston Packing, manufactured by the H. W. Johns-Manville Company, 100 William street, New York, is described in Catalogue V, which has just been published. The increased pressure used in marine steam plants is the main reason why this packing is offered to the public. The text gives full information regarding the composition and construction of the packing, and there is a great deal of information regarding its various uses, sizes, etc.

A very compact, neatly-printed catalogue is now being distributed by the Buffalo Forge Company, Buffalo, N. Y., regarding the Buffalo down-draft heating forges for industrial works. The catalogue is about 4 inches by 7 inches in size and comprises 52 pages. There is an average of more than one illustration to a page, so that it can readily be seen that the catalogue is very complete, and that the various types and styles of forges are thoroughly illustrated. Any one at all interested in the subject of forges should send for a copy of this catalogue.

The marine gasoline engines and launches manufactured by the Frank M. Watkins Manufacturing Company, Baymiller and Sixth streets, Cincinnati, O., will be found described in the catalogue which this company issues. The catalogue is 6 by 9 inches in size and contains full-page engravings of the single-cylinder, also of the two-cylinder engine, affording opportunity to understand fully the design and arrangement of the engine. The text describes concisely the special features of the engine, and drawings in the back part of the catalogue illustrate some of the hulls which this company manufactures.

"A Practical Method of Dealing with the Expense Due to the Neglect of Boilers" is the title of a pamphlet which has been issued by the Blackburn Smith Company, 29 Broadway, New York city. The title is one that will appeal to every one of our readers who has to do with steam plants. A copy can be had by applying to the company for one and mentioning MARINE ENGINEERING.

"An Industrial Problem" is the title of a booklet published by W. S. Rogers, Keene, N. H. The booklet is devoted to a system of keeping costs in factories, and is the result of Mr. Rogers' own experience in shop management. The book is not sent free, but a charge of ten cents is made. Any manufacturer or superintendent who has the handling of shop work will find it a good investment.

The Universal Drafting Machine, manufactured by the Universal Drafting Machine Company, Cleveland, O., is fully described in a catalogue which is now being distributed. The catalogue is 6 by 9 inches in size, and on each left-hand page is a large illustration showing the machine in use, so as to illustrate as graphically as possible the manner in which it is made use of. Any one who has to do with drafting work will appreciate one of these catalogues.

The Fort Wayne Electric Works, Fort Wayne, Ind., issues frequent bulletins describing the several specialties of this company, each bulletin being complete in itself. Among the bulletins just received is No. 1029, devoted to enclosed, direct-current, 110-volt arc lamps; 1034, devoted to standard small motor panels; 1028, devoted to enclosed, direct-current, power-circuit arc lamps, multiple-series type. Copies of any or of all these bulletins can be had upon application.

"Davidson Propeller Fans" is the title of a handsomely-published catalogue now being distributed by the Massachusetts Fan Company, Waltham, Mass. The catalogue comprises 32 pages, handsomely printed on heavy coated paper, and it is bound in heavy paper cover, which is neatly printed in two colors. These fans are made for heating, ventilating, drying, and other purposes. Large illustrations are given to show the styles of the fans, and each type is concisely described. The fans are made to be driven either by electricity or steam engines.

The air compressors manufactured by the Chicago Pneumatic Tool Company in its works at Franklin, Pa., will be found splendidly described in a 72-page catalogue which is now being distributed. The catalogue is very handsomely printed and equally well illustrated. These compressors are designed primarily for use in connection with pneumatic tools of all kinds, but, of course, can be used for any purpose where compressed air is desired. The illustrations in the catalogue were all made especially for it, and there is altogether a great deal of very valuable information regarding both air compressors and the many uses of compressed air. The many tables add much to the value of the catalogue. The illustrations show nearly all kinds of pneumatic tools, so that altogether the catalogue is an unusual treatise on the subject.

A Most Useful Book for Engineers and Draughtsmen

Hawkins-Emett Diagramal Formulae

IT CONSISTS OF

25 cards, about 8x10 inches in size, on each of which is worked out diagrammatically some special part of engines of different powers, such as thickness of cylinder walls, diameter of piston rods, area of port openings, etc.

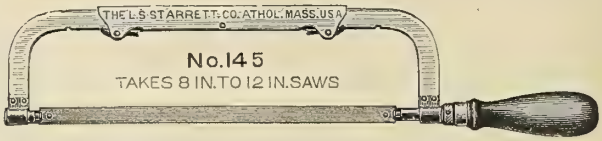
PRICE, $3.00, POSTPAID

Marine Engineering, 309 Broadway NEW YORK

AMONG THE FINE MECHANICAL TOOLS WHICH WE MANUFACTURE FOR THE USE OF ENGINEERS AND MACHINISTS

ARE

Hack Saws and Frames



FOR SAWING TUBING, BRASS, COPPER AND SHEET METAL.

These blades are made of the finest steel; the teeth are sharp and too hard to file.

Every Engineer should have them among his tools.

The L. S. Starrett Co., Athol, Mass.

A copy of our Catalogue No. 16 L can be had for the asking.

THE
Q AND C
Question us
and
C how well we answer
every requirement in the construction and operation of
PNEUMATIC TOOLS OF ALL KINDS
YOKE RIVETERS Q & C HAMMERS
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Our trade mark is a guarantee of highest efficiency and mechanical perfection. Our prices are the lowest for tools that do the work.
Catalog will be mailed for the asking.
The Q & C COMPANY
114 Liberty Street New York
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THE smoother the hull of the yacht, launch or other fast boat, the greater the speed. Dixon's Pot Lead offers less resistance to the water than any other treatment of hulls. Circular and samples sent free.

JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J.

WE CARRY IN STOCK

TWENTY (20) FT. SEAMLESS DRAWN COPPER TUBES, INSIDE DIAM. ALL B. W. G., IN VARIETY OF THICKNESS OF WALL.

TWELVE (12) FT. SEAMLESS BRASS AND COPPER TUBES, INCLUDING IRON PIPE SIZES.

HOT AND COLD ROLLED COPPER BOLT, BRAZIERS' SHEET COPPER AND COPPERSMITHS' RIVETS, SPELTER SOLDER.

CONDENSER TUBES TINNED, 5-8 AND 3-4 X 18 B. W. G., IN 25 FT. LENGTHS.

CONDENSER TUBES AND HEADS, SPECIAL LENGTHS AND MEASUREMENTS FURNISHED FROM MILL.

Send for our new stock list classifying **A MILLION** pound of Brass and Copper.

WATERBURY BRASS COMPANY
122 TO 130 CENTRE STREET, - NEW YORK

The Bourne-Fuller Company, Cleveland, O., issues each month a stock list of iron, steel, pig iron, and other specialties which this company handles. Any user of angles, channels, plates, rivets, sheets, etc., will find this list of much value for reference.

The Canada Launch Works, foot of Carlaw avenue, Toronto, Canada, recently issued a neat catalogue for distribution at the Toronto Exposition. It is entitled "Boat Talks." Any one who is interested in launches and yachting will find it well worth while to send for a copy of this catalogue.

Users of gas engines will read with much interest a small catalogue issued by the Hendricks Novelty Company, 617 South Illinois street, Indianapolis, Ind., describing the Hendricks gas-engine igniter. This is a form of magneto and is designed especially to use in connection with explosive engines. It is to use in connection with a jump-spark coil. The catalogue contains illustrations of the igniter, showing its construction, and the text fully describes its design and operation.

BUSINESS NOTES.

CONSULTING ENGINEER AND NAVAL ARCHITECT.—R. L. Newman, who has been connected with shipbuilding in this country for many years with the Cramp Company, later as general manager of the Globe Iron Works in Cleveland, and more recently as general superintendent of the New York Shipbuilding Company, has opened an office at 187 Chesebrough Building, Bowling Green, New York city, as consulting engineer and naval architect. The development of designs and superintendence during construction will receive his special attention. Vessels for carrying oil in bulk will be a specialty, also surveys on general repairs.

BRASS AND COPPER MARINE SPECIALTIES.—The Waterbury Brass Company, Waterbury, Conn., is now making its New York office, 122-130 Center street, a very important warehouse for handling all of its specialties. This warehouse has an immense floor area, and there is in stock here at all times everything that could be asked for in the line of regular and special shapes and sizes in brass, copper, bronze, etc. The company issues a very complete catalogue, which should be in the hands of every user of brass and copper specialties, as it not only describes the various manufactures of this company, but gives much valuable information regarding the uses of brass, copper, and bronze in marine work. This company has secured the right to manufacture Pope's Island white metal, which is noncorrosive and which is very desirable for many marine uses. Full information regarding this metal can be had upon application to the company, either at the head office in Waterbury or at the New York branch.

WATCH THIS SPACE FOR OUR NUMEROUS SPECIALTIES.

WALWORTH MFG. CO. TOOLS and SUPPLIES for STEAM WATER and GAS USERS BOSTON MASS.

Always Use the STILLSON Adjustable Pipe and Nut Wrench.

TAKES SIZES 1/8 UP TO 5 INCHES

MADE OF BEST TOOL STEEL THROUGHOUT

The Only WRENCH That Gives Entire Satisfaction.

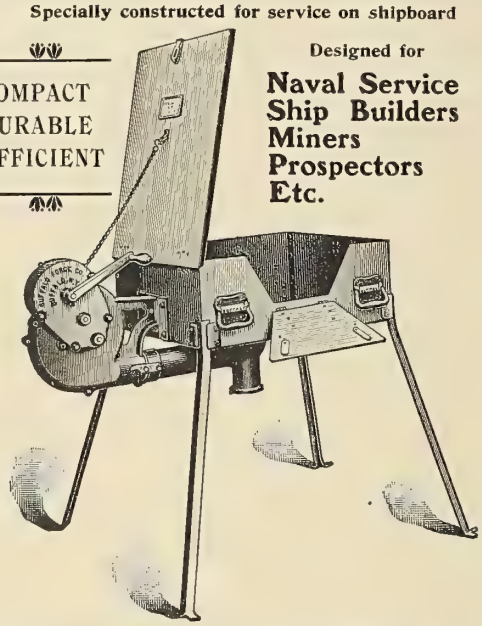
JOBBERS SELL THEM—IF YOURS DON'T, WRITE.
New York, Park Row Building. **WALWORTH MFG. CO.,** Boston, 128 Federal Street.
Write for our BLUE CATALOGUE "D." showing complete line of engineers' pipe fitting tools.

BUFFALO FOLDING FORGES

Specially constructed for service on shipboard

COMPACT
DURABLE
EFFICIENT

Designed for
Naval Service
Ship Builders
Miners
Prospectors
Etc.



Buffalo Forge Company
BUFFALO, N. Y., U. S. A.

Salt Air Searches Paint

If there be any weakness the sea will find it. Common paint may deceive the "land lubber," but the "old sea-dog" demands

ZINC WHITE

FREE: Our Practical Pamphlets
"The Paint Question,"
"Specifications for Architects,"
"Paints in Architecture,"
"French Government Decrees."

THE NEW JERSEY ZINC CO.
11 Broadway
New York

Rivet Cement for Hulls.—The U. S. Gutta Percha Paint Company, Providence, R. I., is sending out a very neat circular regarding Rice's gutta percha rivet cement for hulls and steel vessels. The following distinguishing features of this improved cement are given in this circular for the benefit of yacht owners, shipbuilders, and others. It is easily and quickly applied, either with a trowel or, when thinned with turpentine, with a brush; it dries in an hour or two, so that it can be rubbed; it takes a less quantity to form a smooth surface than other cements; it can easily and quickly be brought to a surface as smooth as glass and very free from ridges or furrows by using sandpaper or pumice stone without rubbing through to the metal; its tenacity and adhesiveness are not excelled; it protects plates from rust and pitting, and stands great heat and hard usage; it is sold by the gallon, not by the pound; and is claimed to be very economical because it covers as much surface as that of any other cement. Any of the readers of Marine Engineering interested in the subject of cement will find it worth while to send for a copy of this circular.

Racing Sails for Italy.—Wilson and Silsby, Rowe's Wharf, Boston, Mass., have recently furnished a suit of sails for an Italian yacht, which is to compete for a well-known French trophy. A yacht owned by King Edward of Great Britain will take part in the same races.

Catalogue Cabinet

Will take care of any and all sizes of Catalogues, Price Lists, etc., and so indexed that you can get any one you want instantly.

Contains five drawers of different heights, and divided into compartments of different widths (each with a follower-block to keep catalogues upright); a cupboard with nine adjustable partitions; and two Card Index drawers for indexing the catalogues under name of firm, as also under name of article for a cross reference. A Sliding Shelf makes the outfit complete. Made of selected quartered oak, and perfect in every appointment.

YAWMAN & ERBE MFG. CO., 360 Broadway, New York
92 Franklin St., Boston; 138 Wabash Ave., Chicago, and Nine other Cities.

TO BURN FUEL OIL.—Steamship *S. V. Lukenbach,* now at Newport News, Va., is to be equipped with the Kirkwood System for burning fuel oil by Tate-Jones and Company, Empire Building, Pittsburg, Pa.

A CARD OF GRAPHITE PAINTS.—An ingenious card, devised for displaying the colors of Dixon's silica graphite paint in such manner as will permit of an exact idea of each color, is issued by the Joseph Dixon Crucible Company, Jersey City, N. J. The color chart carries with it suggestions as to the class of construction that can be protected with this paint, also instruction as to the best methods of applying it. One of these color charts can be secured from the Dixon Company free by referring to MARINE ENGINEERING.

STEAM TOWING MACHINES.—We are informed by the Chase Machine Company, Cleveland, O., that the United States Circuit Court of Appeals has made decision in a suit between the Boston Towboat Company and the Chase Machine Company, which has been in court for six years and has been argued four times. The suit was brought to have the Chase Company enjoined from manufacturing automatic steam towing machines, claiming that the machines which the Chase Company manufactured infringed. This final decision is in favor of the Chase Machine Company, its machine being declared not to infringe.

NICLAUSSE BOILERS.—In the light of the recent test of water-tube and Scotch boilers in the *Minerva-Hyacinth* trials, peculiar interest attaches to the contract just awarded by the British Admiralty for a 16,500-ton battleship of 18,000 horse power, for which Niclausse boilers have been specified. This is the eighth ship of the English navy to be so equipped within the past sixteen months, making the aggregate Niclausse horse power in that navy 114,000, against 105,000 horse power in the United States Navy. These boilers are manufactured in the United States by the Stirling Company, Pullman Building, Chicago, Ill.

MARINE FUEL OIL PLANTS.—Walter Goodenough, marine engineer, with offices in the Battery Park Building, New York city, is handling the Billow System of fuel oil appliances, manufactured by the National Supply Company, of Chicago. This concern has been in the business of designing and installing fuel-oil systems for the past seventeen years, and its apparatus is in use for nearly every purpose that fuel of any sort can be used for. While it makes burners suited to any medium that is convenient to atomization, it has, through its long experience, become convinced that air at about two pounds pressure forms the most economical method of atomizing oil for burning under boilers. All of the apparatus from pumping system to burners is made in the most thorough manner. The fuel-oil plant at the Columbian Exposition was installed by this company, as have been also others, ranging in horse power from 12,000 to 50. Mr. Goodenough is prepared to furnish designs and estimates on the above apparatus to cover any condition required.

For Steam Making Apparatus For Refrigerating

MECHANICAL THERMOMETERS

HOHMANN & MAURER MFG. CO. ROCHESTER, N.Y. TRADE H&M MARK

For All Engineering and Manufacturing Purposes

Write for Illustrated Catalogue M.

NEW YORK 85 Chambers Street
CHICAGO 119 Lake Street
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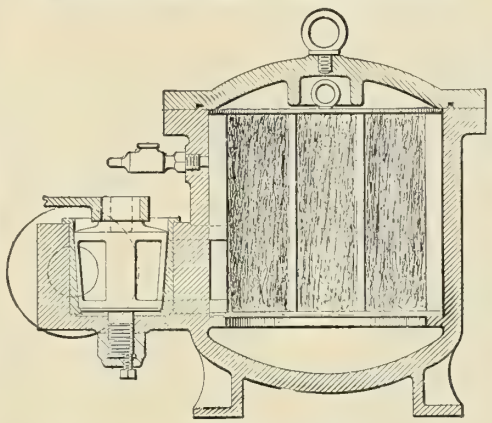
Patent "Reflex" FEED WATER FILTERS

Will pay for themselves in less than a year by protecting your Boilers from Grease, Oil and All Mechanical Impurities.

For Steamships, Yachts, Tugs, Factories



For Electric Power Plants, Hotels, Apartment Houses and Mines

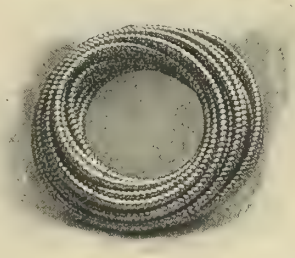
Try them—If you don't like them we'll take them back and refund purchase price.

SEND FOR CATALOGUE AND PRICE LIST.

Blackburn Smith Co., 29 Broadway NEW YORK

FLEXIBLE METALLIC CONDUIT

For Modern Electric Wiring



Our Flexible Metallic Conduit, Flexible Steel Armored Conductors, and Steel Armored Flexible Cord are particularly well adapted to all classes of Marine work. They afford thorough protection to the wires and insulation from rodents, mechanical and other injuries, are water-proof and simple to install.

Write for Catalogue No. 40415

SPRAGUE ELECTRIC COMPANY

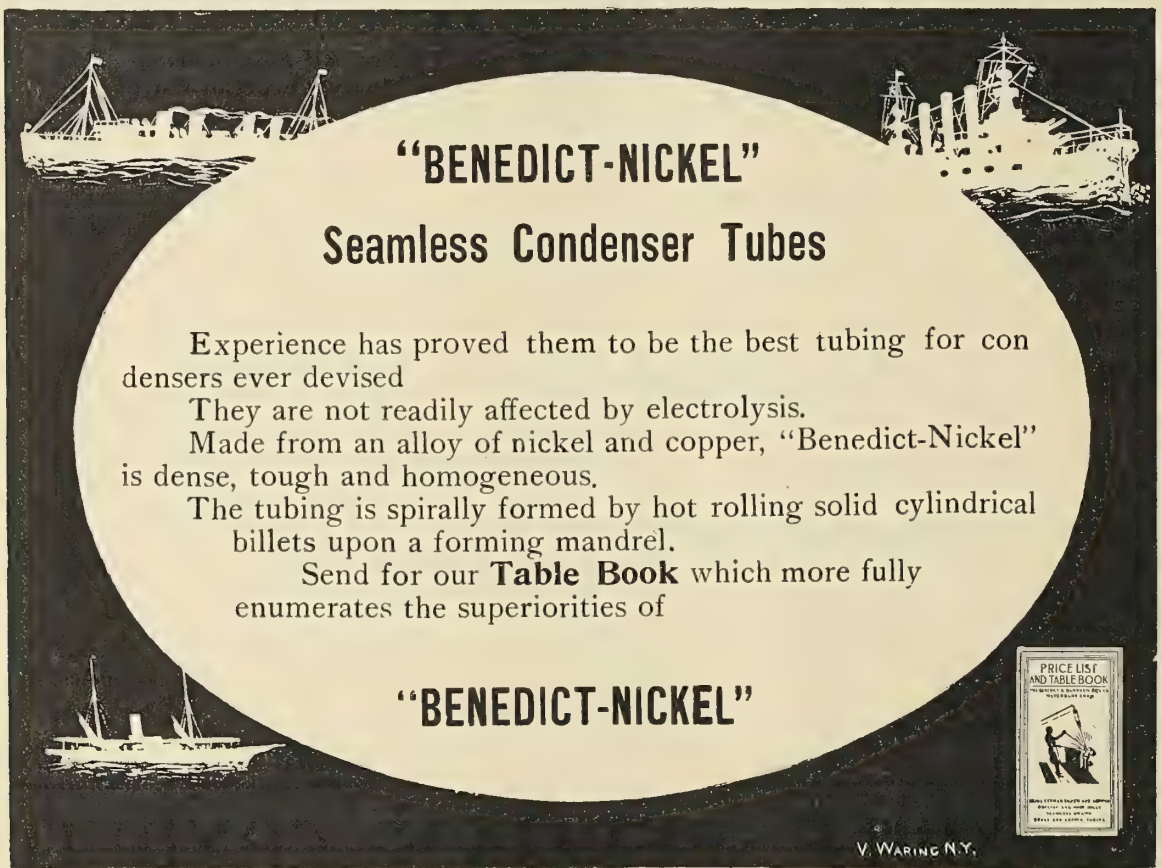
General Offices: 527 531 West 34th Street, New York

Chicago: Fisher Bldg. Boston: Weld Bldg. St. Louis: Security Bldg. Baltimore: Maryland Trust Bldg.

New Lunkenheimer Plant.—The Lunkenheimer Company, Cincinnati, O., sent out very handsomely engraved invitations last month to the many friends of the company to attend the opening of the new Fairmount works.

Care of Electrical Machinery.—James Reilly's Sons Company, 122 to 130 Center street, New York city, make a specialty of keeping marine electrical machinery in order under contract for stated periods. The arrangement is that the company inspects, makes repairs when any damage is done, and keeps all of the electrical machinery in running order, thus relieving the engineering department of much detail in this way. The company carries in stock everything in the line of parts and complete apparatus, so that in case of an accident or breakdown the machinery can be replaced or repaired in the shortest time possible. The contract which the company makes includes the supplying, free of charge, of commutator brushes and all other parts which are necessary to keep the machinery in good order. Full information regarding this contract can be had upon application to the company.

Christensen Air Compressors.—The Christensen Engineering Company, Milwaukee, Wis., with which N. A. Christensen has been connected as superintendent since its organization and is still engaged as consulting engineer, and with whom his other interests remain undisturbed, will hereafter manufacture his air compressors connected with air brakes exclusively. This will place under his control the manufacture of air compressors for all other uses. The air compressors furnished by him will be manufactured by the Christensen Engineering Company, under his designs, specifications, and inspection, insuring the same excellency in design, detail, and workmanship which the products of this company have always possessed. It also leaves him free individually to extend the introduction of his system of air compressors in a rapidly-extending field. There are now in use over seven thousand of these compressors of all sizes and capacities, constructed under his patents and used for various purposes. His engineering and sales offices are located in the Herman Building, corner of Wisconsin street and Broadway, Milwaukee.


"BENEDICT-NICKEL"
Seamless Condenser Tubes
Experience has proved them to be the best tubing for condensers ever devised
They are not readily affected by electrolysis.
Made from an alloy of nickel and copper, "Benedict-Nickel" is dense, tough and homogeneous.
The tubing is spirally formed by hot rolling solid cylindrical billets upon a forming mandrel.
Send for our Table Book which more fully enumerates the superiorities of
"BENEDICT-NICKEL"
PRICE LIST AND TABLE BOOK
V. Waring N.Y.

We are also among the largest manufacturers of Seamless Brass and Copper Tubing (made by the same process as "Benedict-Nickel"), and of brass and copper sheets, wire, etc.

TOBIN BRONZE.—We sell it at manufacturer's prices.

BENEDICT & BURNHAM MFG. CO.,

WATERBURY, CONN.

New York, 253 Broadway. **Boston, 172 High Street.**

COURSE IN NAVAL ARCHITECTURE.—The Board of Education, New York city, has appointed George Crouse Cook, 15 Whitehall street, New York city, a lecturer on Naval Architecture in the courses of free lectures given every year at the various schools under the auspices of the Board. Mr. Cook will carry on this work in connection with his regular work of consulting naval architect and engineer.

MECHANICAL THERMOMETERS.—The Helios-Upton Company, Peabody, Mass., reports a great demand of late for high-class mechanical thermometers for use in the engine and boiler rooms of modern steam vessels. This company makes thermometers for all special purposes, the design being suited to different conditions. The hot-water thermometer is made especially for use in connection with marine boilers and is easily connected to any boiler. Circulars are issued by the company describing fully these instruments and their value.

A Word to the Wise

"McKIM GASKETS"

The long-wear kind. Made of packing encased in soft annealed copper
Can be reapplied indefinitely.
Big and little—for manhole, handhole and pipe fittings.
One grade—the best we can make.
Prices and catalog on request.

McCord & Co.

104 Broadway, New York
1471 Old Colony Bldg., Chicago

FREE SAMPLE OF GRAPHITE PIPE-JOINT COMPOUND.—There is perhaps no better economy to the steam fitter and the engineer than a perfectly tight joint, yet one that can be easily taken apart if desired. It is claimed to be possible to have such joints if Dixon's Graphite Pipe-Joint Compound is used. Flake graphite is impervious to the action of heat or cold, acids or alkalies. Hence the value of a graphite compound when properly prepared. The Joseph Dixon Crucible Company, of Jersey City, N. J., will send booklet and sample free of charge.

REFLEX WATER GAGE.—Wm. T. Bonner and Company, 141 Broadway, New York, report a steadily increasing demand for the Reflex water gage, which is made especially for use on marine boilers. A feature of this gage is that the water appears black, while the steam shines with a silvery luster. This peculiar effect is brought about by the shape of the observation glass. Other features claimed for this gage are, that a quick and reliable observation can be made of the water level; that it is an effective precaution against explosions; a safety against injury to boiler-room employees; that there is a saving in the expense in glass tubes, and that it can be applied easily to existing boiler mounting.

SALE OF PNEUMATIC TOOLS.—The Philadelphia Pneumatic Tool Company, Philadelphia, Pa., reports that the sales for the last two or three months have broken all previous records and that orders continue to come in at an even greater rate. Among the many orders received were some from the New York Shipbuilding Company, the Newport News Shipbuilding and Dry-dock Company, the Cambria Steel Company, the Pennsylvania Steel Company, several large railroad companies, and orders from Paris, London, Copenhagen, and elsewhere. The largest percentage of increase in orders seems to be for rotary drills. Fortunately this company has just added to its machine-shop equipment a large number of lathes, automatic machines, grinders, presses, etc., so that it is in shape to handle all orders promptly.

SPRAGUE ELECTRIC COMPANY.—The annual meeting of the stockholders of the Sprague Electric Company was held October 14, at the office of the company in Watsessing, N. J. The following directors were elected for the ensuing year: Allan C. Bakewell, D. C. Durland, S. M. Hamill, J. R. Lovejoy, John Markle, J. R. McKee, and E. G. Waters. At a meeting of the directors held later in the day, officers were elected as follows: president, Allan C. Bakewell; first vice-president, S. M. Hamill; second vice-president, D. C. Durland; secretary and treasurer, Harry R. Swartz. Col. Bakewell has long been identified with the electrical industry, and has won many friends through his executive ability and honorable business methods. He was vice-president and general manager of the old Interior Conduit and Insulation Company, which was absorbed by the Sprague Electric Company some years ago. D. Clarence Durland, second vice-president, has for the past three years been assistant general manager of the Sprague Company, and his promotion is evidence of his engineering and executive abilities.

WESTON STANDARD PORTABLE DIRECT-READING

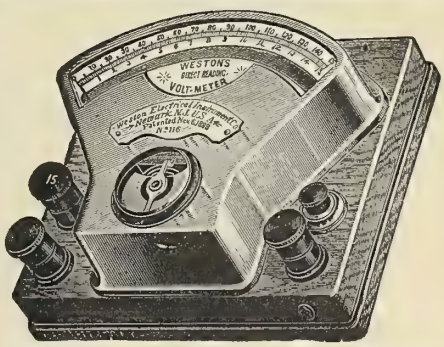
Voltmeters, Ammeters,

MILLIVOLTMETERS, VOLTAMMETERS, MILLIAMMETERS, OHMMETERS, PORTABLE GALVANOMETERS, GROUND DETECTORS, AND CIRCUIT TESTERS.

Our Portable Instruments are recognized as **the standard** the world over. Our **Voltmeters** and **Ammeters** are unsurpassed in point of extreme accuracy and lowest consumption of energy.

WESTON ELECTRICAL INSTRUMENT CO.,
Waverly Park, Newark, N. J., U. S. A.

BERLIN:—Euro ean Weston Electrical Instrument Co., Ritterstrasse 88.
LONDON:—Elliott Bros., 101 St. Martin's Lane.



WESTON Standard Portable Direct Reading Voltmeter.

Patent Attorneys.—Straley, Hasbrouck, and Schloeder, counsellors at law at 257 Broadway, New York city, and who have been doing a large business in the securing of patents, registering of trade marks, and litigation in connection with them, have increased their business so as to make the patent department a more distinct feature. This branch of the business will hereafter be in the charge of the well-known patent solicitor, C. Augustus Dieterich. Mr. Dieterich has had many years of experience in this special work, and everything in the department will be made as complete as possible, so that the patents secured by this firm shall be as comprehensive and as complete as it is possible to be.

Brass and Copper for Marine Uses.—Owing to the large increase of trade in the Philadelphia territory, the U. T. Hungerford Brass and Copper Company, 497-503 Pearl street, New York, has opened a branch office in Philadelphia at 510 Arch street. This branch will not carry very much stock, but will be in direct communication with the New York office, where almost anything that could be called for in connection with marine work of any kind is carried in stock, so that orders can be filled promptly. Three of the best marine salesmen connected with the Hungerford Company will make their headquarters in the Philadelphia branch.

The Temperley-Miller Cableway.—It is announced that the British Admiralty, which recently made very successful tests in coaling ships at sea with the Temperley-Miller marine cableway, which is manufactured by the Lidgerwood Manufacturing Company, 96 Liberty street, New York, has decided to build several special colliers of large displacement, which are to be fitted with this cableway, so that war vessels can be more readily coaled at sea. Spencer Miller, the inventor of this system, has just returned from Europe, where he found much interest in the subject of coaling at sea, and particularly in this cableway. Mr. Miller states that undoubtedly every European power will find it necessary to introduce this system on a large scale in its navy.

The Ideal Pigment

TRADEMARK FEROX REGISTERED JULY 8, 1902.

The only adequate protection for Ships, Bridges, Structural Iron and Steel Work

Mohawk Paint & Chemical Co.

SOLE MANUFACTURERS OF

Patent Iron Oxide Paints

98% Pure

19 Liberty Street, New York

The only **Pure** Iron Oxide Paint.
The only Non-Crystalline Oxide of Iron

Being porous and spongy it absorbs and retains the oil and makes a permanent, durable, unchanging, protective coating for wood and metals.

It is rust-proof and not subject to chemical action.
Unequalled for submarine use.

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REMINGTON

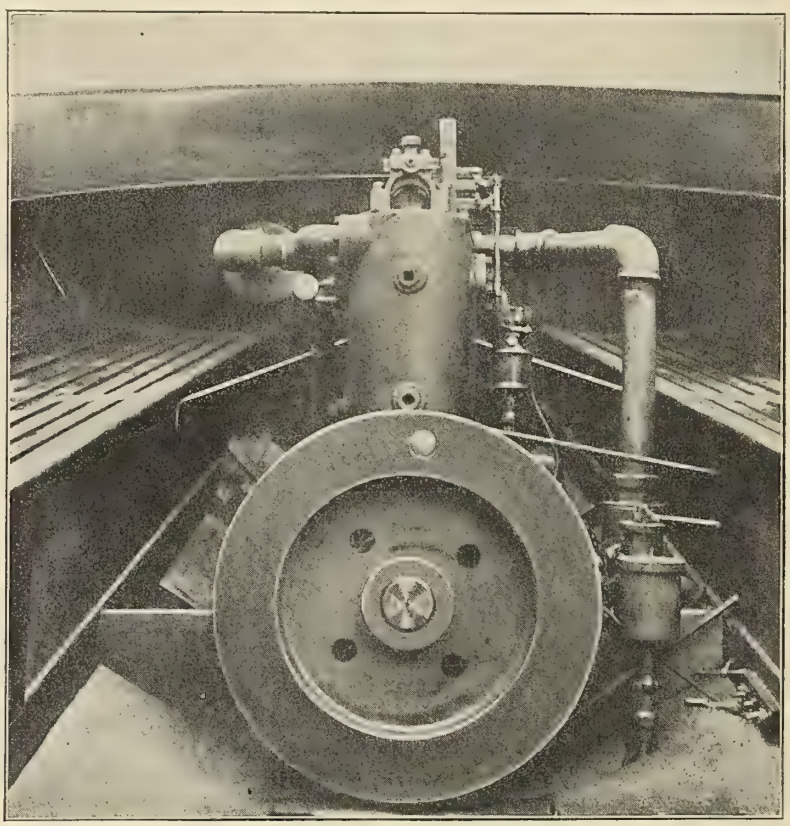
A Great Name
A Great Reputation
A Great Motor

2 Cylinder 4 Cycle Slow Speed

Write for prices now while we can fill your orders.

Remington Automobile & Motor Co.

UTICA, N. Y., U. S. A.



SPECIAL NOTICES

Announcements under this heading will be inserted at the uniform rate of thirty-three-and-a-third cents a line. Lines average ten words each.

MACHINERY DRAFTSMAN WANTED.

We want a First-Class Machinery Draftsman, one with gas-engine experience preferred. Address, giving references, HOLLAND TORPEDO BOAT CO., New Suffolk, L I

AGENCY TO HANDLE MARINE SPECIALTIES.

A man of experience, and who understands fully the trade in Baltimore and vicinity, desires to represent manufacturers of a few leading specialties. Full information can be had by addressing AGENCY, care Marine Engineering

POSITION WANTED AS SUPERINTENDENT.

Position is desired as Superintendent in marine engine works by an active, energetic, seven-o'clock man with seventeen years' experience. Is well posted in all branches of the business. Address M. T., care Marine Engineering.

SHIP DRAFTSMEN WANTED.

Two SHIP DRAFTSMEN are wanted who have had about eight years' experience in drawing office work; must be capable of getting out designs and all details for both merchant marine and naval vessels. Address, giving experience, references, and salary required, SHIP DRAFTSMAN, care Marine Engineering.

CHIEF ENGINEER WANTED.

A CHIEF OPERATING ENGINEER for the power plant of the Western Electric Co., New York City. The plant consists of four 500 H. P. Vertical Cross Compound Engines, eleven Elevators, and various Steam Apparatus. Address applications, stating experience and salary expected, to F. A. MUSCHENHEIM, Asst. Shop Supt., 463 West Street, New York City.

RIVETERS FOR A NAVY YARD.—John F. Allen, 370 Gerard avenue, New York city, who has already sold many portable riveting machines and other tools in many of the ship- and boiler-building establishments of the country, as well as in several navy yards, reports the sale of a 34 1-2-inch reach-jaw riveter for use in the navy yard at Bremerton, Wash.

IMPROVED LAUNCH PLANT.—The gas engine and launch business which has been carried on for some years by Edward F. Leeds, Bridgeport, Conn., has been incorporated under the name of the Leeds Marine Equipment Company. The business has so increased that incorporation was found very desirable, but the policy of the company will remain the same and there will be no change in business methods.

CHANGE OF NAME.—The Cleveland Automatic Machine Company, Cleveland, O., has succeeded to the business formerly conducted by the Cleveland Machine Screw Company. This change is made in order to better harmonize the name of the company with the character of the business. The company has never manufactured screws, but automatic machines for the manufacture of screws. As the company is very largely extending and enlarging its facilities for manufacturing automatic machinery, the reason for the change is very apparent.

MARINE FORGINGS.—Owing to the greatly increased pressure of business in its marine forging department, the Vulcanus Forging Company, Cleveland, O., has installed a large amount of improved and modern machinery, so that the plant has a capacity now of a daily output of over 15 tons. This company makes a specialty of marine and machinery forgings, Government specification rivets, and bolts of all kinds, etc. The present directors consist of F. H. Kindl, formerly chief engineer of the Carnegie Steel Company; A. M. Moreland, president of the Moreland Trust Company, Pittsburg, Pa.; H. L. Snively, treasurer of the Union Potteries Company, Pittsburg, Pa.; A. G. Hathaway, and W. H. Bevis, of Cleveland. The present officers are: F. H. Kindl, president; A. G. Hathaway, vice-president; H. L. Snively, secretary and treasurer; and W. E. Renner, superintendent.

Cabins and Staterooms

of modern vessels especially those in the passenger service should demonstrate the supreme possibilities of the wood finisher's art.

This demands a special varnish, however, as atmospheric conditions are more destructive to varnish afloat than ashore and the ordinary article is of but little use.

The varnish best adapted to withstand the deleterious influences of wind, wave and weather is

Berry Brothers' Spar Varnish.

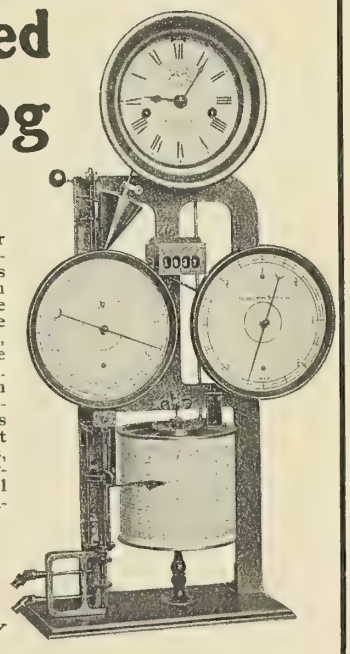
Further particulars and a unique marine puzzle sent free for the asking. Write us.

Berry Brothers, Limited,
Varnish Manufacturers,

NEW YORK BALTIMORE ST. LOUIS
BOSTON CHICAGO SAN FRANCISCO
PHILADELPHIA CINCINNATI

Factory and Main Office, DETROIT.

The Nicholson Perfected Ship Log



Tells the speed per hour on a dial, counts the distance traveled and makes a paper record of each day's run. Will show the highest speeds May be placed in the Pilot House, Captain's Cabin, Engine Room or Main Saloon. Well adapted for use on Steamships, Sailing Vessels and Yachts. This is not an electric log, is not connected with engines, and has no line overboard. Catalogs and full information upon application.

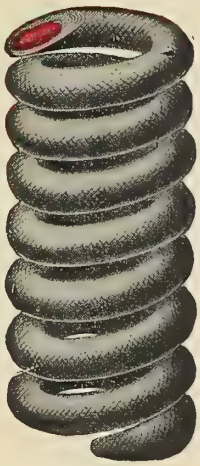
Manufactured by

Nicholson Ship Log Co.
204 Superior Street, Cleveland, Ohio

The Peerless Spiral Piston and Valve Rod Packing

It will hold 400 lbs. of steam

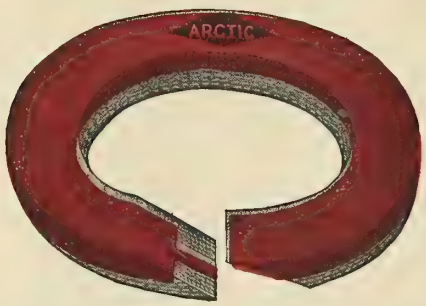
Once tried always used



Will run twelve months in high speed engines

Arctic Packing

To be used exclusively for packing Ammonia Pumps



This packing is made in several hundred sizes

This packing is specially constructed for ice machine service, of layers of rubber and plies of duck which are so arranged and laid as to best resist the actions of ammonia, cold and heat.

The duck is a specially made duck, frictioned with an entirely new compound heretofore unknown to the rubber trade, and the core and back is of the celebrated Rainbow Packing compound, which is specially adapted to resist ammonia, cold and heat.

This packing is constructed on a strictly scientific basis, and the results obtained thus far have demonstrated fully its value for ammonia packing.

This packing is made in several hundred sizes. The rings may be slipped onto the rod very readily.

The usual rule is to be observed in giving measurements, the depth and width of stuffing box and size of piston rod, in order to get the size desired.

Sole Manufacturers of the

Celebrated Rainbow, Eclipse Sectional Rainbow Gasket, Hercules Combination and Honest John Packings.

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THE PEERLESS RUBBER MANUFACTURING COMPANY

16 WARREN STREET, NEW YORK.

16-24 Woodward Ave., Detroit, Mich.
209-211 Magazine St., New Orleans, La.
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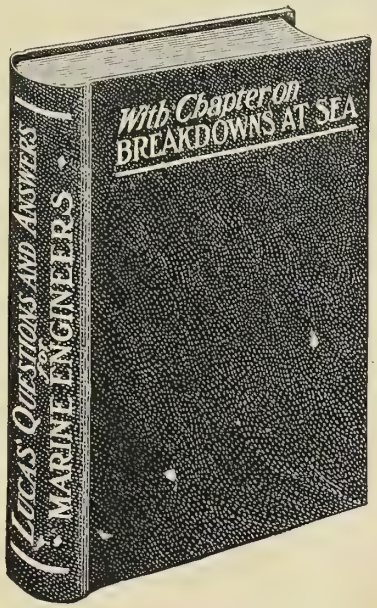
1221-1223 Union Avenue, Kansas City, Mo.
17-23 Beale St. and 18-24 Main St. San Francisco, Cal.
634 Smithfield St., Pittsburg, Pa.

These Goods can be Obtained at All First-class Dealers.

Publishers' Announcement

A New Book for the New Year—1903.

Lucas' Questions and Answers FOR MARINE ENGINEERS



This is a book for practical men—strictly up-to-date—of great assistance in preparing for examinations for a higher grade, as well as a work for every-day use.

The volume is strongly and durably bound in rich red cloth with full gilt edges, and titles in gold; it is 7½ x 5 inches, 1½ inch thick, and weighs near 2 lbs; it is illustrated with 12 large plate engravings, 66 full, 83 half page, and many other diagrams and illustrations; it has an index with more than 1,000 ready references.

GENERAL OUTLINE OF CONTENTS.

Naturally the book divides itself into two parts—1, Construction; 2, Operation; it contains 516 pages, and 807 Questions with carefully prepared Answers, with nearly 300 explanatory footnotes.

The various types of the marine steam-engine are fully explained, with description of the stationary parts (cylinders, bed plates, etc.) and moving parts (valves, gears, piston, piston-rod, etc.), and the operative details of a marine engine. Paddle Wheels and Screw Propellers, the auxiliary apparatus, piping and pipe connections, are all taken up separately.

All types of steam boilers are described, with details of the construction of fire- and water-tube boilers, operative details of marine boilers, fuel and fire-gases, combustion, and steam and its properties.

Five chapters are devoted to the Care and Operation of a Marine Engine, including lubricants and lubrication, packing and packing materials, care and overhauling in port, laying up a marine engine, and its care and operation under way. A chapter is devoted to Breakdowns and Repairs, as also one to Constructive Materials and Tests of Strength; and in an Appendix, Spare Parts and Tool Outfits are described.

Price $2.00

Sent Post-paid to any Address.
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Money Refunded if Not Satisfactory.

SEND ALL ORDERS TO

THEO. AUDEL & CO.
ENGINEERING PUBLICATIONS
63 Fifth Avenue, New York City

CUT OUT

ORDER COUPON

M. E. Nov.

Date .....

Enclosed find two dollars, for which send prepaid at once to the following address, one copy **"Lucas' Questions and Answers for Marine Engineers."**

Name .....

Address .....

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CUT OUT

The advertisements on pages 14-21 are devoted to Boiler Room Equipment as follows:

ASBESTOS—See NON-CONDUCTING COVERING.
ASH EJECTORS.
Davidson, M. T.
ASH HOISTS.
BLOWERS—Also see VENTILATORS.
American Blower Co.
Boston Blower Co.
Buffalo Forge Co.
Sturtevant Co., B. F.
BLOW-OFF VALVES—See VALVES.
BOILERS—Also see ENGINE BUILDERS; also SHIP BUILDERS.
Almy Water Tube Boiler Co.
Babcock & Wilcox Co.
Boyer Patent Sectional Water Tube Boiler Co.
Kingsford Foundry and Machine Works.
Lake Erie Boiler Works.
Stirling Co., The
Taylor Water Tube Boiler Co.
Thorpe-Platt & Co.
Thropp, John E., & Sons Co.
BOILER COMPOUND.
BOILER FEED PUMPS—See PUMPS.
BOILER PLATE.
BOILER STAYS.
BOILER TUBES.
National Tube Co.
Shelby Steel Tube Co.
Walworth Mfg Co.
CORRUGATED FURNACES—See FURNACES.
EXHAUST FANS—See BLOWERS.
EXHAUST HEADS.
Sturtevant Co., B. F.
Walworth Mfg. Co.
EXPANSION JOINTS.
FANS—See BLOWERS.
FEED CHECK VALVES—See VALVES.
FEED WATER FILTERS.
Ross Valve Co.
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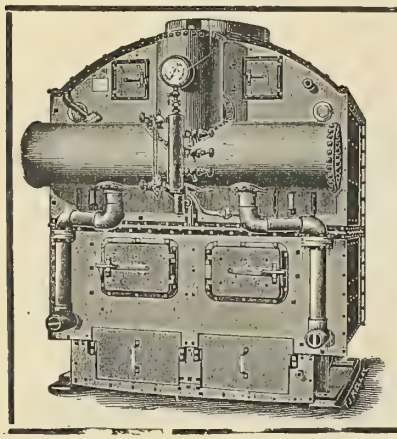
If specialties are wanted which are not advertised, Marine Engineering Information Bureau will furnish names of manufacturers and dealers.



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" 102, Fred W. Linsemeyer, 210 Clinton St., So. Haven, Mich.
" 103, Herbert Parkins, New Berne, N. C.

TRADE PUBLICATIONS.

The Joseph Dixon Crucible Company, Jersey City, N. J., issues a neat four-page folder describing Dixon's silica graphite paint for the protection of heated surfaces. The circular states that the smokestacks of the Fall River steamer *Priscilla* are painted with this paint.

The patent anchors manufactured by L. M. Bowers and Company, Binghamton, N. Y., are described in a catalogue which this company is distributing. Several illustrations are given showing the anchors complete and in section, so as to explain fully the special characteristics of these anchors.

The Providence Engineering Works, Providence, R. I., recently made exhaustive tests of a Rice and Sargent engine which this company installed in the plant of the American Sugar Refining Company, Brooklyn, N. Y. The results of these tests have been published in pamphlet form under the title of "Steam Consumption at Partial Load."

The many types of engines manufactured by the Buffalo Forge Company, Buffalo, N. Y., both horizontal and vertical, are handsomely illustrated in a pocket-sized booklet now ready for distribution. No attempt is made to describe the engines, but each one is handsomely illustrated, so that if the reader is still further interested he can communicate with the company for further information.

Very handsome catalogues are issued by N. A. Christensen, Milwaukee, Wis., describing in much detail and illustrating very thoroughly the air compressors which he manufactures. The compressors vary in size from very small portable ones to compressors of the largest size. In addition to a description of the compressors there is much information regarding the subject of compressed air and pneumatic tools.

The "Ceco" electrical machinery manufactured by the Christensen Engineering Company, Milwaukee, Wis., will be found very fully described and handsomely illustrated in one of the finest catalogues received this month. Each part of the machine is shown in detail, and there are many line drawings showing the design, which any experienced electrician would like to know. There are also many tables giving much valuable data.

The C. O. Bartlett and Snow Company, Cleveland, O., is now distributing Catalogue No. 7, a very complete publication of nearly 400 pages. It is devoted exclusively to the elevating, conveying, and general mill machinery manufactured by this company. The special parts of the magazine most interesting to our readers will probably be the many types of conveying machinery for handling coal and other cargoes in bulk.

An exceedingly interesting application of the De Laval steam turbine is described in a folder issued by the New York Electric Headlight and Train Lighting Company, 52 Broadway, New York city. It comprises one of these turbines direct connected to a dynamo, pump, blower, etc. A number of pictures illustrate the different combinations and explain fully regarding them. Copies of the circular can be had, free, upon application.

The gas engines and launches manufactured by the Lozier Motor Company, Plattsburg, N. Y., are beautifully illustrated and described in book No. 9, copies of which can undoubtedly be had free by any of our readers on applying to the company. The catalogue comprises 44 pages and is an exceptionally fine specimen of printing. The various parts of the engine are illustrated with fine engravings, and altogether it is one of the handsomest engine and launch catalogues we have ever seen.

A free copy of a handsomely-illustrated catalogue describing the Carley life float will be sent to any reader of MARINE ENGINEERING by the Carley Life Float Company, Produce Exchange Building, New York city. The catalogue is bound in paper cover, printed in three colors, and contains many large engravings showing tests made of this float. These pictures add much to the value of the catalogue, as they are taken from life and show what a large number of people can be carried.

When writing to advertisers please refer to MARINE ENGINEERING.

"America Cup Contests and Yacht Green" is the title of a folder issued by S. J. Williams, 11 Broadway, New York. It gives a record of the America Cup contests, with pictures of several of the yachts, together with other interesting information, and contains a color card showing four different shades of Williams' submarine paints.

The Nernst Lamp Company, Pittsburg, Pa., is distributing a catalogue which will interest those who have to do with electricity, as it is devoted to the subject of distribution of light from the Nernst lamp. The special features of this lamp are fully described. It is one of the most recent inventions among electric lamps and has attracted much attention.

The chain blocks manufactured by the Yale and Towne Manufacturing Company, 9 to 13 Murray street, New York, are fully described in a catalogue which this company is sending free to all inquirers. The blocks include: differential, for occasional use; duplex, for general use; triplex, for constant use and best economy, as stated on the title page. The catalogue is completely illustrated.

"Work Done" is the title of a 100-page book issued by Westinghouse, Church, Kerr and Company, Maritime Building, New York city. The book is devoted to very complete descriptions of a number of street railways which have been fully equipped by this company. Not only is the text very complete, but there are numerous half-tone engravings and line drawings giving full information not only of the power plants, but the equipment as well.

The subject of lubrication is covered in a manner to interest every engineer in Catalogue No. 7, copies of which can be had upon application to the Hall Manufacturing Company, 40 Cortlandt street, New York city. Among the various specialties illustrated and described are pneumatic oil cups, sight-feed lubricators of many types, grease cups, oil pumps, oil tanks, and oil filters. This company also handles lubricating compounds and engineers' oiling sets, both of which are briefly referred to.

Draftsmen and others who have to do with blue printing will find much information in the catalogue being distributed by the Pittsburg Blue Print Company, 1505 Park Building, Pittsburg, Pa. This catalogue is devoted to a complete description of the blue-printing apparatus manufactured by this company. A number of full-page illustrations, 4 1-2 by 6 1-2 inches in size, add much to the value of the catalogue in showing the various uses of this machine.

Metal melting and refining furnaces of the Schwartz type have a special catalogue devoted to them, issued by the manufacturer, the Hawley Down-Draft Furnace Company, 85 Liberty street, New York city. There are several illustrations showing the construction and arrangement of the furnace, and much information is given regarding its purposes and operation. There are also letters from well-known manufacturers, United States navy yards, and elsewhere, telling of the value of the device.

A Most Useful Book for Engineers and Draughtsmen

Hawkins-Emett Diagramal Formulae

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25 cards, about 8x10 inches in size, on each of which is worked out diagrammatically some special part of engines of different powers, such as thickness of cylinder walls, diameter of piston rods, area of port openings, etc.

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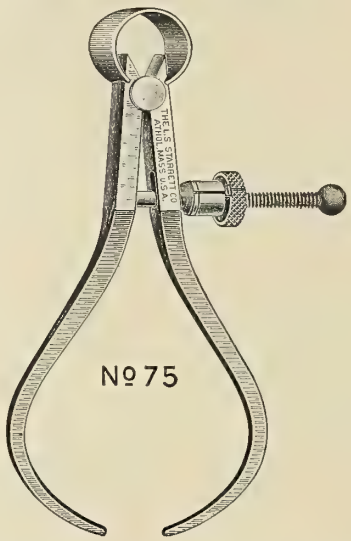

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Our Catalogue, No. 16L, of Fine Tools sent free.

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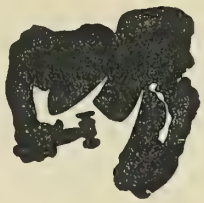

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"Galvanum, a Paint that Will Adhere to Galvanized Iron," is the title of the latest publication issued by the Goheen Manufacturing Company, Canton, O. The value of this paint for covering galvanized iron and other metal surfaces is fully shown in the text.

The Waterbury Brass Company, 122 to 130 Center street, New York, issues frequent bulletins regarding special lines of brass, copper, and bronze specialties which are in stock. All readers of MARINE ENGINEERING who are at all interested in these specialties will have these bulletins sent each issue upon notifying the company.

A very neat folder is issued by the United States Gutta Percha Paint Company, Providence, R. I., devoted exclusively to describing this company's gutta percha rivet cement for hulls of steel or iron vessels. The special features of the cement are fully described and instructions are given as to how to apply it, together with testimonials, etc.

The sight-feed lubricators, oil cups, oil pumps, grease cups, and other oiling devices, either for steam or gas engines, manufactured by the G. B. Essex Brass Company, Detroit, Mich., will be found described in a catalogue which this company will send to any inquirer free upon application. The catalogue contains 34 pages and is one that will interest every engine man.

The thermometers for mechanical uses which are manufactured in great variety by the Helios-Upton Company, Peabody, Mass., will be found fully illustrated and described in a 12-page folder which this company is distributing. Thermometers are so extensively used nowadays on board ship and in land plants for testing hot water and for use in connection with refrigerating machines, and for many other purposes, that this folder will be of much interest.

The Rand Drill Company, 128 Broadway, New York, will send to all readers of MARINE ENGINEERING who are interested in the subject of compressed-air and pneumatic tools a handsome catalogue describing the Imperial air compressors, which this company manufactures. The catalogue contains a number of fine engravings, with much detailed description of the several types of machines. This text, in connection with the several tables, gives a great deal of valuable information.

The Howard Electric Novelty Company, Center and Howard streets, New York, will send to all readers of MARINE ENGINEERING, upon request, a free copy of an interesting catalogue describing a great variety of electric novelties and dry batteries which this company manufactures. These include hand flash or search lights, such as are used frequently in searching out dark places in engine rooms, electric lighters in variety, electric scarfpins, clocks which can be illuminated by pressing a button, together with many other forms of ornamental and useful novelties.

WATCH THIS SPACE FOR OUR NUMEROUS SPECIALTIES.

WALWORTH MFG. CO. TOOLS and SUPPLIES for STEAM WATER and GAS USERS BOSTON MASS.

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Stillson Pipe Wrench.
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Smith Friction Hand Tools.
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SPECIAL DESIGNS BUILT FOR ALL REQUIREMENTS

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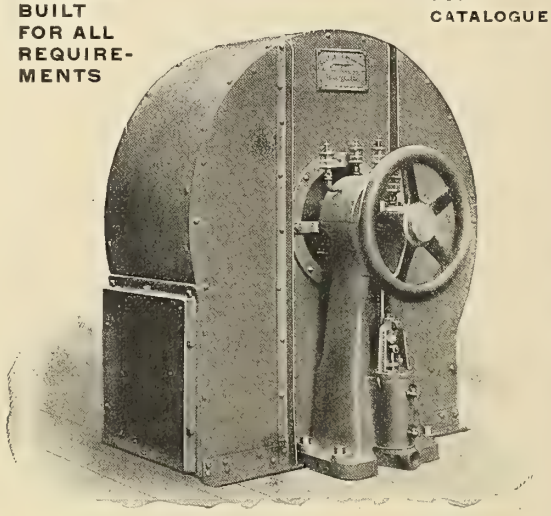

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FREE: Our Practical Pamphlets
"The Paint Question," "Paints in Architecture,"
"House Paints: A Common Sense Talk About Them,"
"French Government Decrees."

The latest short story of the world's great engineers, issued by Wyman and Gordon, Worcester, Mass., is devoted to the great German iron manufacturer, Alfried Krupp.

The Fort Wayne Electric Works, Fort Wayne, Ind., has issued a number of new bulletins. Bulletin No. 1035 is devoted to electrostatic ground detectors, and Bulletin 1027 to enclosed, alternating-current, 104-volt arc lamps.

Mechanical Induced Draft is one of the latest publications of the Buffalo Forge Company, Buffalo, N. Y. The catalogue is pocket size and is given over almost exclusively to illustrations of different types and styles of installations.

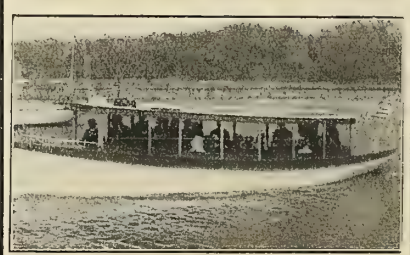
The Wilgus marine oil burner, which is designed specially for use in Scotch marine boilers, has a folder devoted to it, which is being distributed to all inquirers by the Wilgus Manufacturing Company, 52 Natoma street, San Francisco, Cal.

The Modern Machine Shop Outfit is the subject of the latest catalogue issued by the Garvin Machine Company, Spring and Varick streets, New York. It comprises 56 pages and contains a large number of illustrations of all sorts of tools, large and small, such as would be called for in the equipment of a small and medium-sized machine shop.

The ice-making and refrigerating machines manufactured by the Brown-Cochran Company, Lorain, O., have a very neat catalogue devoted to them. It is particularly well printed and neatly illustrated, showing the several types of refrigerating plants for yachts and vessels of various sizes which this company manufactures. Copies can be had by writing to the company.

Large Sale of Packing.—We are informed by the Holmes Metallic Packing Company, Wilkesbarre, Pa., that the past three months have shown the largest demand for this company's metallic packing in the history of the company.

AD-EL-ITE



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FREE. **Send us 10c. for packing and mailing sample sufficient for full trial.**

ADAMS & ELTING CO.,
MANUFACTURERS OF
Wood Finishes and Enamels, Deck Paints.
Smoke Stack Black and Paint Specialties.
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BUSINESS NOTES.

GOLD MEDAL AWARDED.—The C. W. Hunt Company, West New Brighton, Staten Island, has been awarded the highest award of merit—a gold medal—at the Düsseldorf Exhibition, recently held in Germany. The award was made to this company for its conveyor.

FREE TOOLS TO ENGINEERS.—The Mound Tool and Scraper Company, 710 Howard street, St. Louis, Mo., which makes a line of special tools for engineers, offers to send free to any reader of MARINE ENGINEERING who is an engineer a sample packing tool, if the letter is received within a month and MARINE ENGINEERING is mentioned in the letter.

BIG INCREASE IN PLANT.—The Russell and Erwin Manufacturing Company, New Britain, Conn., has placed a contract for the erection of a new building, to be 50 feet wide, 200 feet long, and seven stories high. The construction of the building is to be fireproof throughout, and the floors will have a capacity of 250 pounds per square inch. It is hoped to have the building ready for use by February 1, so that the company will be in shape to handle orders of any size for this company's tools and many other specialties.

MARINE GLUE.—Frederick Shapley and Company, 246 Front street, New York city, are making a specialty of Shapley's United States Marine Glue. This glue is made in either black or deck color, and the following claims are made for it: that it is absolutely water-proof, firm under heat, flexible under cold; that it will not track over the deck, will not melt or become sticky under tropical heat, will not oxidize or rot, yet has all the qualities of rubber. Much information regarding this glue and pictures showing its use is given in a circular issued by this company.

PAINT AND VARNISH REMOVER.—The Adams and Elting Company, Chicago, Ill., reports the greatest demand ever experienced for Ad-el-ite, which this company is selling in enormous quantities for removing paint and varnish. Ad-el-ite is furnished either in liquid or semi-paste form, and the special claims made for it are that it contains no water, alkali, or acid; that it is free from objectionable odor, and does not injure the hands; by its use varnish, paint, shellac, or wax can be wiped clean from the wood within three minutes; it does not affect the glue, does not raise the grain of wood or veneers, does not spot or injure the wood; that it cleans all woodwork for a much less cost than any other process; that it is not only cheap, but thoroughly reliable; that it does not evaporate like alcohol, and that one gallon will entirely remove from 200 to 300 square feet of finished surface. The company makes a very generous offer to those who have not used this remover but who wish to give it a test, as will be seen by the advertisement on another page.

HEATING APPARATUS.—The American Blower Company, Detroit, Mich., has received a large number of orders lately for heating apparatus for large plants, including the buildings of the Lackawanna Steel Company, of Buffalo; the Pittsburg Valve Foundry, Pittsburg, Pa.; the Fox Typewriter Company, Grand Rapids, Mich.; National Malleable Castings Company, Sharon, N. Y.; etc.

MARINE CUSHIONS AND BEDDING.—A recent visit to the factory of M. W. Fogg, manufacturer of cushions, mattresses, and marine upholstery, 202 Front street, New York, gives an interesting idea of the working of a model factory devoted entirely to the manufacture of interior furnishings for steamships, yachts, etc. The ground floor is used for a showroom and office, wherein are shown many of Mr. Fogg's specialties. The office partition has been made to represent a yacht's cabin, the cushions being of a light shade of red leather, with empire green draperies for the windows, making a very fine effect. Upstairs, Mr. Fogg has every improvement and convenience that can be utilized in his business. The second floor is used for cutting and operating. All the sewing machines are run by individual electric motors. On the third floor the construction and filling of mattresses and cushions is attended to, while on the upper floors all the stock of hair, felt, cork, etc., is carried. One feature of the top floor is the large electric motor which is used to run the elevator and exhaust fan. The latter, running at high speed, can draw every particle of dust from the room in a few minutes.

For Steam Making Refrigerating Apparatus

MECHANICAL THERMOMETERS

HOHMANN & MAURER MFG. CO. ROCHESTER, N.Y. TRADE H&M MARK

For All Engineering and Manufacturing Purposes

Write for Illustrated Catalogue M.

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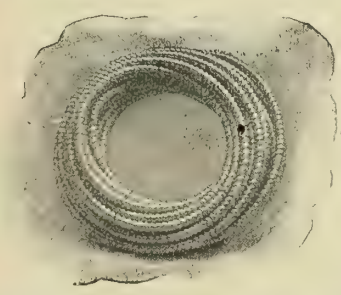
FLEXIBLE METALLIC CONDUIT

For Modern Electric Wiring



Our Flexible Metallic Conduit, Flexible Steel Armored Conductors, and Steel Armored Flexible Cord are particularly well adapted to all classes of Marine work. They afford thorough protection to the wires and insulation from rodents, mechanical and other injuries, are water-proof and simple to install.

Write for Catalogue No. 40415

SPRAGUE ELECTRIC COMPANY

General Offices: 527-531 West 34th Street, New York

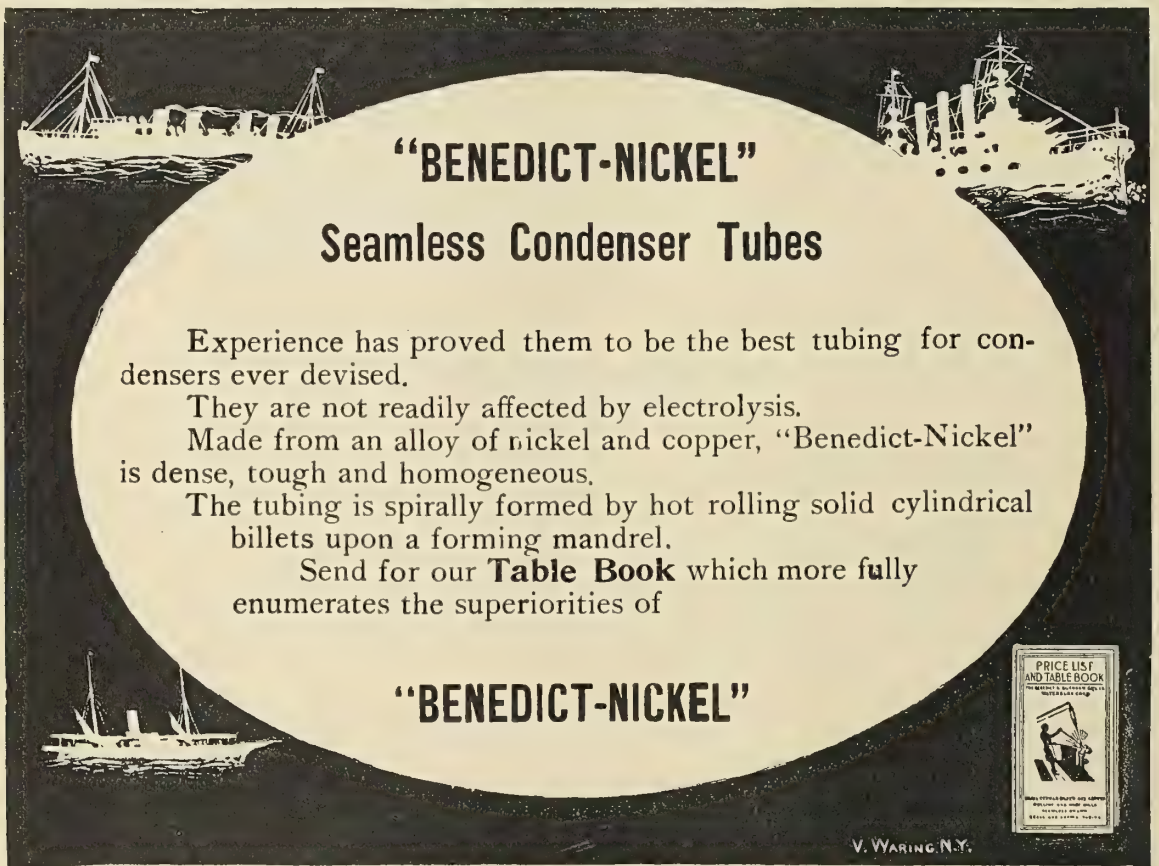
Chicago: Fisher Bldg. Boston: Weld Bldg. St. Louis: Security Bldg. Baltimore: Maryland Trust Bldg.

An Electrically-Equipped Plant.—The Sherwin-Williams Paint Company, Cleveland, O., has had its entire plant equipped with electric power. A large number of motors have recently been purchased from the Westinghouse Electric and Manufacturing Company, Pittsburg, Pa., so that all of the machinery used in paint and varnish making is operated by motors. The same equipment has been applied in the Newark factory as well as in the one at Cleveland.

Marine Hardware.—P. and F. Corbin, New Britain, Conn., are just about building extensive additions to their plant. Included in the additions is a seven-story fireproof building to be used for general manufacturing purposes and a new foundry, to be 60 feet wide and 600 feet long. These improvements will probably be finished at the beginning of the new year, and will necessitate the employment of 100 additional iron molders, 70 brass molders, and 500 extra hands in general manufacturing, thus giving a very large capacity for marine hardware and the many other specialties of this company.

Vessels Classed.—The American Bureau of Shipping, 66 to 70 Beaver street, New York, has recently classed in its Record of American and Foreign Shipping the following vessels: American schooners, *Edgar W. Murdock, Lydia M. Deering, Samuel W. Hathaway, William Bisbee, Phineas W. Sprague;* American barkentine *St. Paul,* and British schooner *Empire*

Test of a Lidgerwood-Miller Cableway.—Details have just been received of an interesting test of the Lidgerwood-Miller marine cableway for coaling at sea which was installed early in the year on board the Russian battleship *Retvizan.* The trial took place September 12 in the Baltic Sea, under the direction of a Board of Inspectors appointed by the Russian Government. A letter received from J. Skorohodof, Lieut. I.R.N., who was present at the test, states that the result was in every way most satisfactory to the trial board. The system was manufactured by the Lidgerwood Manufacturing Company, 96 Liberty street, New York, and installed under the direction of Mr. Spencer Miller, the inventor.


"BENEDICT-NICKEL"
Seamless Condenser Tubes
Experience has proved them to be the best tubing for condensers ever devised.
They are not readily affected by electrolysis.
Made from an alloy of nickel and copper, "Benedict-Nickel" is dense, tough and homogeneous.
The tubing is spirally formed by hot rolling solid cylindrical billets upon a forming mandrel.
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"BENEDICT-NICKEL"
PRICE LIST AND TABLE BOOK
V. Waring, N.Y.

We are also among the largest manufacturers of Seamless Brass and Copper Tubing (made by the same process as "Benedict-Nickel"), and of brass and copper sheets, wire, etc.

TOBIN BRONZE.—We sell it at manufacturer's prices.

BENEDICT & BURNHAM MFG. CO.,

WATERBURY, CONN.

New York, 253 Broadway. **Boston, 172 High Street.**

THE
McKIM GASKET

A profitable Gasket to buy because of its great durability.

Made of rubber encased in soft rolled copper—extra annealed—so that it will accommodate itself to faced or rough joints, and withstand abnormal pressure, temperature or circulation.

Made in all sizes for manhole, handhole and pipe fittings.

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104 Broadway, - New York
1471 Old Colony Bldg., Chicago

FREE!! GIVEN TO all ENGINEERS SENDING US A TRIAL ORDER

A bound book on Engineering, valued at $1.50. We are sole agents for the best line of Asbestos Packings on earth. Including Sheeting, Piston, and Gaskets

BESTOSKING PACKING & SUPPLY CO.,
170 Summer St., Boston
Agents for
TURNER BROS., ROCHDALE, ENGLAND

SCHOOL SHIP YOUNG AMERICA.—Contract has been placed with the Perth Amboy Shipbuilding and Engineering Company, Perth Amboy, N. J., to build a ship to be called *Young America*, which is to be used as a school for the education of boys. The ship will have accommodations for about 600 boys, and while they are being prepared for one of the Government academies, or for college, they will be cruising round the world. The vessel will be dependent entirely upon sails and will be of about 2,600 tons burden.

NEW LUNKENHEIMER PLANT.—The Lunkenheimer Company, Cincinnati, O., manufacturers of brass and iron goods and specialties for engines, boilers, etc., such as brass and iron valves, whistles, injectors, lubricators, oil and grease cups, etc., on Saturday, October 25, formally opened its new works to about three thousand visitors and friends, and is now moved from the old quarters on Eighth street to the fine new plant. The buildings, of which there are five, represent an investment of over $300,000, consisting of the main building, occupied by the brass department, with adjoining buildings for the iron department, brass foundry, power building, and office building; all are of pressed brick and steel construction of modern type. They occupy about three acres of ground and have switching facilities; three acres additional ground provide for future extension of the business. The foundry is equipped with modern appliances, such as overhead track system for carrying material, smelting furnaces burning crude oil, and many pneumatic appliances, such as are used in the latest foundry practice. The general distribution of power throughout the buildings is the latest. The source of energy is a 300-horse-power compound engine, which drives a 240-K.W., three-phase, 220-volt, General Electric, alternating-current dynamo. The current is led out from a switchboard to the different parts of the buildings, where suitable motors (principally attached to the ceiling) are provided to drive the various lines of shafting. These motors are of the Westinghouse and General Electric induction type, without commutators or brushes. The power from the motors to the shafts is transmitted through what is known as the Renold Silent Chain Gear, which permits of a very compact arrangement without noise and friction, thus dispensing with leather belts. Telephones connect all departments to a central exchange, which connects with the city lines, thus affording immediate communication from any point in the works. The business was founded in 1862 by the late Frederick Lunkenheimer, and has grown to large proportions, now employing over 700 men. With increased facilities the company expects to extend its line and take up many new engineering specialties. The company's trade is domestic and foreign, being distributed largely through jobbers; there is a branch store in London, England, and an office in New York city. The company has placed many orders for additional tools and machinery, which are being installed rapidly.

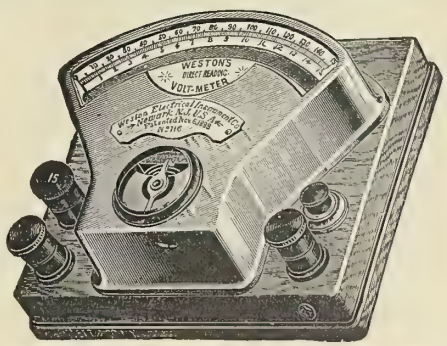
WESTON STANDARD PORTABLE DIRECT-READING
Voltmeters, Ammeters,

MILLIVOLTMETERS, VOLTAMMETERS, MILLIAMMETERS, OHMMETERS, PORTABLE GALVANOMETERS, GROUND DETECTORS, AND CIRCUIT TESTERS.

Our Portable Instruments are recognized as **the standard** the world over. Our **Voltmeters** and **Ammeters** are unsurpassed in point of extreme accuracy and lowest consumption of energy.

WESTON ELECTRICAL INSTRUMENT CO.,
Waverly Park, Newark, N. J., U. S. A.

BERLIN:—Euro·ean Weston Electrical Instrument Co., Ritterstrasse 88.
LONDON:—Elliott Bros., 101 St. Martin's Lane.



WESTON Standard Portable Direct Reading Voltmeter.

New Shipbuilding Company.—The Manitowoc Dry-Dock Company has been organized at Manitowoc, Wis. This company has purchased the shipyard and plant formerly owned by Burger and Burger; also a plant in Chicago. The Manitowoc yard for many years has devoted itself to wooden hulls and repair work. The new company is installing a complete line of tools and equipment for building steel hulls. George Burger will be superintendent of the company. In connection with the plant is a 340-foot dry-dock. The Chicago yard is on the north branch of the Chicago river, and will be equipped with a modern floating dry-dock, as well as having ample facilities for building and repairing of all kinds.

France Metallic Packing.—Now that metallic packing is used so extensively on propelling and other engines in connection with marine work, and because of the greatly-increased demand, A. W. France, Tacony, Pa., has found it necessary to so largely increase his business that he has organized it into a stock company, with a capital stock of $100,000. Hereafter the business will be under the name of the France Packing Company, Incorporated. The company has installed a large amount of automatic machinery and in other ways greatly increased the facilities of its plant. With these increased facilities, the company is now able to fill all orders promptly. Among the new specialties of this company is metallic packing for use in ammonia machines. A recent letter from Chief Engineer Mitchell, of the Atlanta Ice and Coal Company, states: "I put in two sets of your packing on two of our ammonia rods last spring, and have not had to touch them since. The same rods cost us a good many hundreds of dollars the year before in loss of oil and ammonia, cost of packing, and, incidentally, a heavy loss of output on account of frequent stops. Your packing is running under an ammonia pressure of 200 o 250 pounds per square inch."

The Ideal Pigment

TRADEMARK FEROX REGISTERED JULY 8, 1902.

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Mohawk Paint & Chemical Co.

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Patent Iron Oxide Paints

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The only **Pure** Iron Oxide Paint.

The only Non-Crystalline Oxide of Iron

Being porous and spongy it absorbs and retains the oil and makes a permanent, durable, unchanging, protective coating for wood and metals.

It is rust-proof and not subject to chemical action.

Unequalled for submarine use.

SEND FOR DESCRIPTIVE CIRCULAR

THE ENGINE is the important thing about a boat. Might much rather use oars than an Engine that is not absolutely reliable.

THE REMINGTON

has a great name and equally great reputation, and is absolutely reliable.

TWO CYLINDERS FOUR CYCLE SLOW SPEED

WRITE FOR PRICES NOW WHILE WE CAN FILL YOUR ORDER

Remington Automobile & Motor Company

UTICA, NEW YORK, U. S. A.

YACHT BROKERAGE BUSINESS.—Charles G. Davis and Walter B. Bieling have organized under the name of Davis and Bieling and opened offices at 50 Broadway, New York, for the transaction of a general yacht-brokerage business.

CHANGE OF OFFICE.—Arthur Masters, naval architect and yacht broker, at 29 Broadway, New York, has moved into larger and more commodious offices at the same address. He is now in room 42 on the second floor.

A SUCCESSFUL INVENTOR.—A recent issue of the *Successful American* contained a very complimentary article regarding Mr. N. A. Christensen, Milwaukee, Wis. From this account we learn that Mr. Christensen was born in Denmark in 1865 and that as a lad he showed marked mechanical ability. After graduating at the technical institute in Copenhagen, he entered the Danish navy as a constructor, and filled many prominent positions, being promoted with much rapidity. Desiring to see more of the world, he resigned his commission and went to sea on an English merchant marine vessel, for the opportunity to learn the English language as well as to study marine engineering in a practical form. He went to several parts of the world, and in 1891 came to this country, where he became consulting engineer of the Fraser-Chalmers Company, Chicago. In 1894 he went to Milwaukee as designer for the E. P. Allis Company, where he remained until 1896. Meantime he had been doing much experimenting with compressed air, and took out many patents on machinery in this special line. After much litigation his patents were found valid, and many of the electrical roads throughout the country immediately adopted his air brake and other inventions. Meantime a large plant had been built, and now his many inventions are used in all parts of the country. Mr. Christensen will hereafter devote himself exclusively to further developing his inventions in the specific field of compressed air.

Cabins and Staterooms

of modern vessels especially those in the passenger service should demonstrate the supreme possibilities of the wood finisher's art.

This demands a special varnish, however, as atmospheric conditions are more destructive to varnish afloat than ashore and the ordinary article is of but little use.

The varnish best adapted to withstand the deleterious influences of wind, wave and weather is

Berry Brothers' Spar Varnish.

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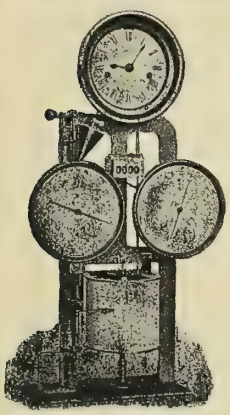


The Nicholson Perfected Ship Log.

Detroit, Mich., October 3, 1902.

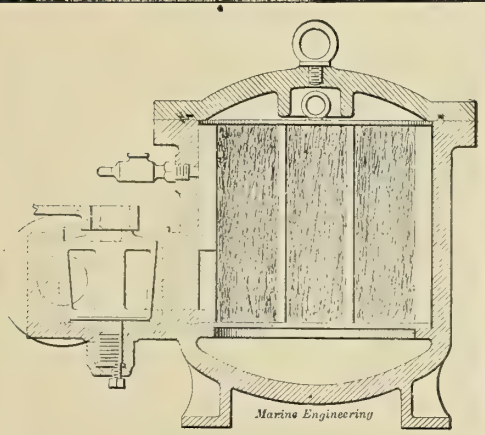
NICHOLSON SHIP LOG CO.,
CLEVELAND, O.

Dear Sirs:—Both logs are doing all that can be expected of them. Last night—up—it registered from Long Point to S. E. Shoals lightship, 134 miles in a northwest gale, and that is about as correct as it can be. If the distance taken off the chart is correct, the records of your logs are. Respectfully,

CAPT. JOHN McCALLUM,
Master, Stmr. Western States.

CATALOGUES ON APPLICATION.

NICHOLSON SHIP LOG CO., 204 SUPERIOR STREET, CLEVELAND, O.



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will pay for themselves in less than one year by protecting your BOILERS from grease, oil, and all other mechanical impurities ?

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For use on Steamships, Yachts, Tugs, and in Hotels, Apartments, Factories and Mines.

TRY THEM, and if you don't like them send them back and we WILL REFUND the Purchase Price.

BLACKBURN SMITH CO., 29 BROADWAY NEW YORK

Davidson Ash Ejector.—The September issue of *The Steamship*, published at Leith, Scotland, contains a fine illustration of the Davidson Ash Ejector, manufactured by M. T. Davidson, 141 Broadway, New York, and in referring to it says: "This apparatus is being largely adopted in America on account of its reliability and the ease and rapidity with which it disposes of the ashes."

Thorne's Patent Ash Ejector.—Many testimonials have been received by Fred H. Pell, 11 Broadway, New York, from users of the Thorne patent ash ejector. Mr. Schermerhorn, owner of the steam yacht *Freelance*, writes: "The Thorne patent asn ejector has been in use on the *Freelance* for four months and has given entire satisfaction." Chief Engineer Clifford, of the steam yacht *Hauoli*, writes: "It gives me pleasure to state that the Thorne patent ash ejector does all and more than you claim for it. It is a No. 4 and will eject ashes as fast as two men can shovel into the hopper. It works well with 60 pounds pressure. Our discharge pipe is under water, and we have no trouble whatever with it."

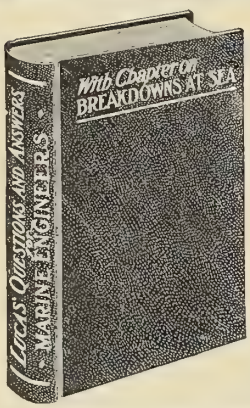
Yacht and Marine Insurance Agency.—Roger Upton has opened offices at 24 Warren street, Salem, Mass., as a yacht specialist and marine insurance agent. His purpose is to have confidential understanding with owners of yachts of all kinds, so that he will be in shape to provide customers, whether it be to purchase or to charter a yacht or to build one. Anything that is desired in the way of caring for, or disposing or making use of, yachts in any way will be Mr. Upton's specialty. Included in this, of course, will be the protecting of the yachts by means of insurance, and otherwise keeping them in first-class order. To those who contemplate building a yacht, Mr. Upton offers his services as a specialist on the subject of design and arrangement. Full information regarding his services may be had by applying to him.

Sails for Australia.—Wilson and Silsby, Rowe's Wharf, Boston, Mass., continue to have demand for sails from Australia, and have just shipped two sets for well-known racing yachts.

International Gas Engines.—The International Engine Works, Mariner Harbor, Staten Island, are distributing a little folder giving a large-sized picture of a double-acting 16 horse-power gas engine with a reversing clutch. The claims made for this engine are: durability, simplicity of construction, lightness, small floor space used, power, speed, safety, economy, steadiness of motion, and self-starting. These engines are made specially for marine uses in sizes from 6 horse power up.

Emergency Accident Case.—The emergency case manufactured by the Adolph Levy Company for use on board ship or in shipyards and engine rooms deserves attention. This case contains everything that is necessary to be used in case of an accident, and from the names shown on the circular is in very general use. The last Baldwin-Ziegler expedition to the pole carried ten of these cases. Any of the readers of Marine Engineering interested will find it worth while to send for a catalogue, at 127 East Twenty-third street, New York.

Interesting Booklets Free.—George H. Daniels, General Passenger Agent of the New York Central and Hudson River Railroad Company, Grand Central Station, New York city, has issued two interesting pamphlets, copies of which are sent free to all inquirers. One is entitled "Bronx Park, New York Zoological Garden, the Largest in the World, and the New York Botanical Gardens and Museum, also the Largest in the World." The folder describes fully these and other features of the park, and gives in detail the easiest way to reach the park, which is by means of the New York Central Railroad. The other folder describes historical pilgrimages around New York and along the Hudson river, as reached by the New York Central Railroad.



Lucas' Questions and Answers
For MARINE ENGINEERS.

This is a book for practical men—strictly up to date—of great assistance in preparing for examinations for a higher grade, as well as a work for every-day use.

The volume is strongly and durably bound in rich red cloth with full gilt edges, and titles in gold; it contains 516 pages; it is 7½ x 5 inches, 1½ inches thick, and weighs nearly 2 lbs.; it is illustrated with 12 large plate engravings, 66 full, 83 half-page, and many other diagrams and illustrations; it has an index with more than 1,000 ready references.

GENERAL OUTLINE OF CONTENTS.

Naturally the book divides itself into two parts—1, Construction; 2, Operation; it has 807 Questions with carefully prepared answers, with nearly 300 explanatory footnotes.

The various types of the marine steam-engine are fully explained, with description of the stationary parts (cylinders, bed plates, etc.) and moving parts (valves, gears, piston, piston-rod, etc.) and the operative details of a marine engine. Paddle Wheels and Screw Propellers, the auxiliary apparatus, piping and pipe connections, are all taken up separately.

All types of steam boilers are described, with details of the construction of fire- and water-tube boilers, the operative details of marine boilers, fuel and fire-gases, combustion, steam and its properties.

Five chapters are devoted to the Care and Operation of a Marine Engine, including lubricants and lubrication, packing and packing materials, care and overhauling in port, laying up a marine engine, and its care and operation under way. A chapter is devoted to Breakdowns and Repairs, as also one to Constructive Materials and Tests of Strength; and in an Appendix, Spare Parts and Tool Outfits are described.

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